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# THE ABRAHAM L. POMERANTZ LECTURE

## Don't Blink

### SNAP DECISIONS AND SECURITIES REGULATION

*Frank Partnoy*<sup>†</sup>

*Modern securities markets move at record speed. Trading decisions are faster than ever. Average investors can immediately acquire information. Rapid technologies have benefits, particularly reduced costs. But fast-moving markets can also be dangerous. Few people had time to think carefully during the financial crisis of 2008 or the “flash crash” of May 6, 2010, when stocks plunged 5-6 percent in minutes and then rebounded almost as quickly.*

*This article explores the consequences of this speed for securities markets. It addresses the extent to which securities regulation should take into account the pace of decision making. It discusses recent scholarly research on snap decisions and suggests legal reforms, some designed to harness the power of quick decisions and others directed at their dangers. It proposes that regulators slow down the markets with proposals ranging from the improbably difficult (steps to respond more deliberately to crises) to the improbably simple (adding a lunch break to the trading day).*

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## INTRODUCTION

This essay addresses snap decisions and securities law, so it seems appropriate to begin with a story of one lawyer's snap reaction to Abraham Pomerantz, the renowned and respected plaintiffs' securities litigator who pioneered the use of derivative suits by shareholders against corporate officials and whose life and career this lecture series honors.<sup>1</sup> I have this story as double hearsay from Ed Labaton, another well-known plaintiffs' lawyer, who heard it during the 1960s when his firm was four floors below the Pomerantz firm and shared its library.<sup>2</sup>

It was either a Tuesday or a Thursday, the days on which motions were heard back then, outside room 506 of the federal courthouse in Manhattan. Abe Pomerantz and a defense lawyer from a white-shoe New York law firm had just finished arguing a motion. Outside the hearing room, in the lingering heat of the argument, the defense lawyer snapped. He made a nasty personal attack on Abe, calling him, among other things, a "strike-suit lawyer." Abe didn't take insults quietly, so he got in the other lawyer's face, pointed his finger, and exclaimed, "I'll see to it that I never sue one of your clients again."

If that lawyer had paused for a moment to think about why he was able to make a living as a securities defense lawyer, he might have held his tongue. In this piece, I argue that the same kind of pause that might have helped this lawyer also might be good policy in the securities markets. Indeed, I intend to show that much of the wisdom of securities regulation is directed at limiting or lengthening snap decisions by market participants. I also suggest that the study of time and timing might be a fruitful area of exploration for securities-law scholars and that notions of delay should play a more prominent role in the study of markets and corporate and securities law, and in policy.

In some areas of corporate and securities regulation, the law introduces delay and probably gets it about right. There is a waiting period before registration of securities for an initial public offering, and it is illegal to sell securities during that

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<sup>1</sup> The Pomerantz Lecture honors the life and work of Abraham L. Pomerantz, a 1924 graduate of Brooklyn Law School. The lecture series focuses on topics of corporate securities law and related issues of professional responsibility. The law firm of Pomerantz Haudek Grossman & Gross LLP, of which Abraham Pomerantz was the founding partner, provides continuing support for this series.

<sup>2</sup> Correspondence with Edward Labaton (Feb. 26, 2011) (on file with author).

period.<sup>3</sup> There is a review and comment process with the Securities and Exchange Commission (SEC) for registration statements.<sup>4</sup> Private placements are exempt and consequently can be created and sold much more quickly.<sup>5</sup> (It is worth noting that the bulk of troubled assets sold during the financial crisis, including collateralized debt obligations (CDOs), fell within the private-placement exemption.<sup>6</sup>) Resales by security holders are restricted by Rule 144—no resale for a year.<sup>7</sup> Proxy regulation delays voting for up to a year.<sup>8</sup> Various provisions of the Williams Act delay tender offers.<sup>9</sup> There are delays related to gun jumping, Hart-Scott-Rodino, and other regulatory review processes.<sup>10</sup> Section 16(b) has a six-month disgorgement rule.<sup>11</sup> Various securities filings are delayed to limited extents, including insider ownership forms and Schedules 13D and 13F.<sup>12</sup> Short-term

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<sup>3</sup> JOHN C. COFFEE, JR. & HILLARY A. SALE, *SECURITIES REGULATION: CASES AND MATERIALS* 165 (Robert C. Clark et al. eds., 11th ed. 2009) (There is an average of two to three months of work that must be accomplished before the registration statement can be filed.).

<sup>4</sup> *Id.* (The period before the Commission finally issues its letter of comments can vary greatly. The current SEC policy calls for thirty days but it can take up to one hundred days. It often takes longer at the end of the calendar quarter or in March for financial statement filings.)

<sup>5</sup> *Id.* at 74 (Private placements do not require a registration statement and the purchasers are often sophisticated and can be reached quickly and personally.).

<sup>6</sup> Luis A. Aguilar, Comm'r, U.S. Sec. & Exch. Comm'n, Speech at SEC Open Meeting, Washington, D.C.: Addressing the Information Asymmetry in the Securitization Market to Put Investors and the Economy on Safer Footing (Apr. 7, 2010), available at <http://www.sec.gov/news/speech/2010/spch040710laa.htm> (“[M]any have concluded that a contributing factor to the crisis was a lack of disclosure about, and understanding of, asset-backed securities—including CDOs—offered in private placements.”).

<sup>7</sup> COFFEE & SALE, *supra* note 3, at 531; see also 17 C.F.R. § 230.144 (2010) (Qualified institutional buyers (QIB) may purchase a restricted security, but that QIB still may not resell it to a non-qualified purchaser until after one year has passed.)

<sup>8</sup> Tom Burnett, *The Key Points to Look for in a Corporate Proxy Statement*, AM. ASS'N OF INDIVIDUAL INVESTORS J., Feb. 2001, at 8, available at <http://www.aaii.com/journal/article/the-key-points-to-look-for-in-a-corporate-proxy-statement> (“All publicly traded companies—with the exception of the tiny ones that are listed on the Nasdaq Bulletin Board—must file a proxy statement once a year in advance of their annual meeting”); see also 15 U.S.C. § 78n(c) (2006) (prior to the annual meeting, even if no proxy solicitation is made, the issuer must still file with the Commission and transmit to all holders information equivalent to that found in the proxy).

<sup>9</sup> COFFEE & SALE, *supra* note 3, at 726-29. Shareholders can withdraw their tendered shares from seven days until sixty days after commencement. Other provisions also reduce the pressure to tender.

<sup>10</sup> *E.g.*, 15 U.S.C. § 77e (It is illegal to sell or offer to buy securities before a registration statement has been filed.); *id.* § 18a (This latter code section requires a filing and waiting period before any person that doesn't meet an exception may acquire voting shares.)

<sup>11</sup> *Id.* § 78p.

<sup>12</sup> *Id.* § 78m (Schedule 13D is ten days and Schedule 13F is forty-five days); see also *Schedule 13D*, U.S. SEC. & EXCHANGE COMMISSION, <http://www.sec.gov/answers/sched13.htm> (last visited July 30, 2011); *Form 13F—Reports Filed by*

capital gains are taxed at higher rates than long-term gains.<sup>13</sup> Even the most ardent supporters of market efficiency use one-day, or even multiday, event studies, rather than instantaneous analyses of price changes, to assess loss causation and damages in securities litigation.<sup>14</sup> Deal litigation is fast-paced and frenetic, but deal-protection devices create time for directors, lawyers, and judges to consider mergers more carefully.<sup>15</sup> All these provisions illustrate an unspoken, yet overarching, objective of corporate and securities law—to slow us down.

Conversely, consider the dangers when regulators or legal rules favor a quick response. Critics of the government's response to the financial crisis, including Sheila Bair, former head of the Federal Deposit Insurance Corporation (FDIC), have noted that panic and quick reactions led to poor decisions, particularly in the rescue of Bear Stearns, AIG, and other banks (and in the opposite failure to anticipate the complex fallout from the Lehman Brothers bankruptcy).<sup>16</sup> The public, and relatedly legislators, tend to react quickly and negatively to short sellers, even though short selling played a valuable and important role in uncovering and publicizing financial misstatements at various financial institutions, as well as Enron.<sup>17</sup> Many critics claim corporate officers and directors are increasingly focused on short-term share price maximization instead of long-term sustainable profits.<sup>18</sup> Financial reporting is

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*Institutional Investment Managers*, U.S. SEC. & EXCHANGE COMMISSION, <http://www.sec.gov/answers/form13f.htm> (last visited July 30, 2011).

<sup>13</sup> IVO WELCH, *CORPORATE FINANCE: AN INTRODUCTION* 322 (Donna Battista ed., 2009).

<sup>14</sup> Frank Torchio, *Proper Event Study Analysis in Securities Litigation*, 35 J. CORP. L. 159 (2009) (Frank Torchio is president of Forensic Economics, Inc., and teaches finance and economics at the William E. Simon Graduate School of Business Administration at the University of Rochester. His article is referenced here to showcase the prevalence of event studies in today's market.). For a general synopsis of event studies, see ALAN PALMITER & FRANK PARTNOY, *CORPORATIONS: A CONTEMPORARY APPROACH* 91 (2010).

<sup>15</sup> See PALMITER & PARTNOY, *supra* note 14, at 959-60.

<sup>16</sup> See generally Joe Nocera, *Sheila Bair's Bank Shot*, N.Y. TIMES, July 9, 2011, (Magazine), at MM24, available at <http://www.nytimes.com/2011/07/10/magazine/sheila-bairs-exit-interview.html?pagewanted=1&r=1&ref=magazine>; Sheila C. Bair, Chairman, Fed. Deposit Ins. Corp., Remarks to the National Press Club (June 24, 2011), available at <http://www.fdic.gov/news/news/speeches/chairman/spjun2411.html>.

<sup>17</sup> See FRANK PARTNOY, *INFECTIOUS GREED: HOW DECEIT AND RISK CORRUPTED THE FINANCIAL MARKETS* 406, 408 (2003).

<sup>18</sup> ASPEN INST. BUS. & SOC'Y PROGRAM, *OVERCOMING SHORT-TERMISM: A CALL FOR A MORE RESPONSIBLE APPROACH TO INVESTMENT AND BUSINESS MANAGEMENT 2* (2009), available at <http://www.aspeninstitute.org/sites/default/files/content/images/Overcoming%20Short-termism%20AspenCVSG%2015dec09.pdf> (Focusing on short-term stock performance instead of long-term maximization of profits can increase transaction

done on a quarterly basis even though most investors have much longer time horizons. Executive compensation is also relatively short term. Even annual bonuses create an incentive mismatch when the risks associated with employee action are borne over longer periods. These issues have become especially challenging in recent years, given the crush of technology, the press of constant e-mail, the temptations of the Internet, and the resulting focus on the short term.

In this article, I argue that regulation often takes, or should take, the approach of encouraging or ordering delay, of saying "Don't Blink." There are two senses in which I mean "Don't Blink." One is about keeping our eyes wide open and looking closely so we don't miss something important. The other is about the dangers of making snap decisions, as fast as the blink of an eye. My goal in exploring these two ideas is to encourage scholars to examine the role of delay in financial-market decision making, and to explore the intersection of decision making and time management, so we can better understand the benefits associated with waiting and the art and science of delay.

This article will focus on two prominent examples in which timing posed particularly important policy challenges: the financial crisis of 2008 and the flash crash of May 6, 2010. Part I describes the financial crisis, comparing the ways in which Goldman Sachs and Citigroup handled the situation and analyzing the government's decision not to save Lehman Brothers. Part II discusses the flash crash, documenting the concerns with high-frequency trading and proposing implementation of circuit breakers and lunch breaks.

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costs, encourage dangerous risk-taking, and put stakeholder's long-term investments in jeopardy.)

## I. THE FINANCIAL CRISIS

I begin my discussion of the financial crisis with a story about Lehman Brothers and the book *Blink*, and an introduction to the notions of snap decisions and delay in the financial markets. Next, I compare the way Goldman Sachs dealt with the financial crisis with the approach taken by Citigroup, and I analyze the companies' procedures through the lens of the first sense of "Don't Blink"—staying focused on what is important. Finally, I describe the weekend government meeting that determined the fate of Lehman Brothers and show how this approach comports with the second sense of "Don't Blink"—making a quick decision.

### A. *Lehman Brothers and Blink*

Several months after September 2008—the time most people think of as the peak of the recent financial crisis—there were reports that Lehman Brothers, the investment bank that filed for bankruptcy on September 15, 2008, and thereby triggered a credit freeze,<sup>19</sup> had assigned *Blink* as part of its training program for top executives. Lehman had invited Malcolm Gladwell, the author of *Blink*, to speak to the firm's elite group of future leaders.<sup>20</sup>

*Blink*, a bestselling book from 2005, proposed that we should focus on the first two seconds of our decisions.<sup>21</sup> Gladwell called on readers to "acknowledge there can be as much value in the blink of an eye as in months of rational analysis."<sup>22</sup> Although the later parts of *Blink* also explored some of the dangers associated with biases in decision making,<sup>23</sup> the media and the public received the book primarily as a justification for intuition and snap decisions.

Before September 15, 2008, my personal views were decidedly pro-*Blink* and anti-Lehman. I greatly admired Gladwell, and I had publicly excoriated Lehman. In fact, on

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<sup>19</sup> See David Goldman, *Credit Freeze: What Lehman Wrought*, CNNMONEY (Nov. 16, 2008, 7:24 PM), [http://money.cnn.com/2008/11/14/news/economy/two\\_months\\_since\\_lehman/index.htm](http://money.cnn.com/2008/11/14/news/economy/two_months_since_lehman/index.htm).

<sup>20</sup> ANDREW ROSS SORKIN, *TOO BIG TO FAIL: THE INSIDE STORY OF HOW WALL STREET AND WASHINGTON FOUGHT TO SAVE THE FINANCIAL SYSTEM—AND THEMSELVES* 120 (2009).

<sup>21</sup> MALCOLM GLADWELL, *BLINK: THE POWER OF THINKING WITHOUT THINKING* 8 (2005).

<sup>22</sup> *Id.* at 17.

<sup>23</sup> See, e.g., *id.* at 252-53.

September 14, 2008, just hours before Lehman's bankruptcy, I published an opinion piece in the *Financial Times* entitled "Hubris—is thy name Richard Fuld?"<sup>24</sup> My basic take on these topics was: *Blink* good; Lehman bad.

So my initial reaction when I heard about Lehman's *Blink* reading assignment—my snap response, in fact—was that Lehman officials must have overreacted to the book's praise for quick reactions. The last thing Richard Fuld, the head of Lehman, and his fellow managing directors needed was *The Power of Thinking Without Thinking*, which is the subtitle to *Blink*. Indeed, the media portrayed this incident as an example of the folly of Lehman's obsessively short-term focus, and several journalists pointed to Joseph Gregory, Lehman's former president, as the architect of the firm's speedy mindset.<sup>25</sup>

As academics, we have two main weapons: a skepticism about received wisdom and a lot of time on our hands. So I explored the details of this anecdote about Lehman and *Blink* with the hope that I might learn something about Lehman's culture. My interviews and research revealed two interesting things.<sup>26</sup>

First, Lehman's leadership program did not embrace snap decision making; instead, it did the opposite, stressing the dangers of snap decisions. Joseph Gregory and other senior managers at Lehman created a cutting-edge, intellectually rigorous training program, taught by leading social science scholars. The substance of the program was highly skeptical of intuition and snap decisions. Lehman even paid to develop a customized Implicit Association Test, or IAT, to demonstrate to its own officials how they were biased regarding race, age, gender, and politics. The program's participants and content were diverse along just about every axis.

Malcolm Gladwell's talk was at the end of the program, a capstone designed to get managing directors from around the world together to discuss the firm's global approach to decision making. But the folks at Lehman didn't study a caricature of *Blink*. They read and studied the whole book, including chapter

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<sup>24</sup> Frank Partnoy, *Hubris—Is Thy Name Richard Fuld?*, FT.COM (Sept. 14, 2008, 8:04 PM), <http://www.ft.com/cms/s/0/6168c7f6-828e-11dd-a019-000077b07658.html#axzz1RvYple00>.

<sup>25</sup> Gregory was terminated in June 2008, months before the firm's bankruptcy. See Ben White, *Lehman Chief Accepts Blame for \$2.8bn Loss*, FT.COM (June 16, 2008, 9:46 PM), <http://www.ft.com/intl/cms/s/0/50a84d4c-3b99-11dd-9cb2-0000779fd2ac.html#axzz1MpxRSu65>.

<sup>26</sup> During 2011, I interviewed and corresponded with several former Lehman employees, who wished to remain anonymous.



6 covering the Bronx police shooting Amadou Diallo and the concluding chapter on gender bias in music auditions.

And yet Lehman's employees made colossally bad decisions. They took on too much subprime mortgage risk.<sup>27</sup> They hid liabilities from shareholders.<sup>28</sup> They made these bad decisions over months and years, and their elite senior leadership did not spot or correct them.

Some scholars have argued that the popular interpretation of *Blink's* thesis was oversimplified and incorrect.<sup>29</sup> Seventh Circuit Judge Richard Posner criticized *Blink's* assumptions and opined that the book was filled with attenuated anecdotes, poor analyses, and overreaching assumptions.<sup>30</sup> More recently, social science researchers published empirical work that demonstrates the dangers associated with snap decisions.<sup>31</sup> This literature shows that two seconds is rarely the optimal amount of time in which to make a decision.<sup>32</sup>

Even for what we call snap decisions, people frequently benefit from waiting at least several seconds, up to a minute or so. Some critics argue that analysis trumps intuition for most decisions and suggest that even snap decisions are the result of longer-term analysis.<sup>33</sup> Within particular time frames, ranging from a split second to years, people are often better off making decisions at the end of the relevant time period—at the very last possible instant. Although this kind of delayed action is

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<sup>27</sup> See, e.g., Peter Robison & Yalman Onaran, *Fuld's Subprime Bets Fueled Profit, Undermined Lehman*, BLOOMBERG (Sept. 15, 2008), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aiETiKXNbDVE>.

<sup>28</sup> Fraud allegations were raised against Lehman and its accounting firm Ernst & Young. See *Going for the Auditors: The Ultimate Target of the Lawsuit May Be Lehman's Former Bosses*, ECONOMIST (Dec. 29, 2010), [http://www.economist.com/node/17800083?story\\_id=17800083](http://www.economist.com/node/17800083?story_id=17800083).

<sup>29</sup> See, e.g., *Big Think Interview with Christopher Chabris*, BIG THINK, <http://bigthink.com/ideas/20582> (last visited July 30, 2011) ("We are, in a way, taking on the impression that a lot of people have from books like, 'Blink,' by Malcolm Gladwell, and others in that category, which is sort of an uncritical belief in the power of intuition and snap judgments and so on, and the idea that you should rely on them whenever possible.").

<sup>30</sup> See Richard A. Posner, *Blinkered*, NEW REPUBLIC (Jan. 24, 2005), <http://www.law.uchicago.edu/news/posner012405>.

<sup>31</sup> See generally CHRISTOPHER CHABRIS & DANIEL SIMONS, *THE INVISIBLE GORILLA: AND OTHER WAYS OUR INTUITIONS DECEIVE US* (2010); STEVEN JOHNSON, *WHERE GOOD IDEAS COME FROM: THE NATURAL HISTORY OF INNOVATION* (2010).

<sup>32</sup> See, e.g., Dana R. Carney, C. Randall Colvin & Judith A. Hall, *A Thin Slice Perspective on the Accuracy of First Impressions*, 41 J. RES. PERSONALITY 1054 (2007) (studies showing accuracy frequently increasing with response times of greater than two seconds).

<sup>33</sup> See MICHAEL R. LEGAULT, *THINK: WHY CRUCIAL DECISIONS CAN'T BE MADE IN THE BLINK OF AN EYE* 10 (2006).

often labeled procrastination, it is really more a form of delay management, a process of understanding when to go fast and when to go slow.<sup>34</sup>

Is it possible to generalize from this new perspective on Lehman and *Blink* to gain any insight into the causes of and response to the crisis? One way to assess the importance of relying on longer-term analysis versus short-term intuition is to compare two institutions that arguably were at opposite poles of the financial crisis: Goldman Sachs and Citigroup.

*B. Goldman Sachs, Citigroup, and the Gorilla: The First Sense of "Don't Blink"*

There are many versions of why the financial crisis occurred, but they often boil down to the following condition: "If you had only taken a step back and thought this through . . ." For example, many financial market participants—bankers, investors, and regulators—relied on credit rating agencies and mathematical models for analytical shortcuts that were woefully inaccurate and inadequate. They used ratings and math as mnemonic devices to streamline a massive flow of information into something they could understand.<sup>35</sup> Then they decided that, if this complex structured instrument is rated triple-A, or even higher than triple-A, it must be low risk.<sup>36</sup>

Consider this sentence: if a Monte Carlo simulation based on historical correlation assumptions predicts that the probability of subprime mortgage defaults rising to a level that would impair a super senior tranche of a synthetic collateralized debt obligation is sufficiently small that the tranche is virtually risk free, then we can hold tens of billions

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<sup>34</sup> Professor Manuel Utset has suggested that the notion of delay management can be captured by the mental process of cost-benefit analysis, instead of intuition: if the cost of acting immediately outweighs the long-term benefits, the person will act. Manuel A. Utset, *Procrastination and the Law*, in *THE THIEF OF TIME: PHILOSOPHICAL ESSAYS ON PROCRASTINATION* 253, 253-55 (Chrisoula Andreou & Mark D. White eds., 2010).

<sup>35</sup> See, e.g., *Why Economists Failed to Predict the Financial Crisis*, KNOWLEDGE@WHARTON: FIN. & INVESTMENT (May 13, 2009), <http://knowledge.wharton.upenn.edu/article.cfm?articleid=2234>.

<sup>36</sup> When the realization hit that the CDOs were much riskier than the rating they carried, the crediting agencies downgraded them and the banks had to change not only their formulas, but also their balance sheets. Between the third quarter of 2007 and the second quarter of 2008, mortgage securities had been downgraded by \$1.9 trillion. See Jon Birger, *The Woman Who Called Wall Street's Meltdown: Star Bank Analyst Meredith Whitney Says the Economy Is About to Sink Into a Deep Recession*, CNNMONEY (Aug. 6, 2008, 11:57 AM), [http://money.cnn.com/2008/08/04/magazines/fortune/whitney\\_feature.fortune/index.htm](http://money.cnn.com/2008/08/04/magazines/fortune/whitney_feature.fortune/index.htm).

of dollars of that exposure without worry, or indeed without even disclosing it. One positive result of the financial crisis is that many more people understand the preceding sentence than did a few years ago. But not many people took the time to understand the principles underlying the text of this sentence or to ask for a detailed analysis of why so many triple-A-rated synthetic instruments could be created without high-quality underlying assets.

With that background, it is strange that Goldman Sachs would emerge as the supposed villain of the financial crisis. By every account, Goldman engaged in vigorous, deliberative risk management. Groups of senior managers discussed every major position. They not only marked positions to market on a daily basis, but they analyzed worst-case scenarios.<sup>37</sup> They publicly disclosed value-at-risk, or VAR, numbers, but internally they did not take them on faith.<sup>38</sup> They listened to and learned from their counterparties, particularly hedge funds, who were betting against mortgages.<sup>39</sup> When the ABX indices of subprime mortgages began declining in 2006, Goldman's analysts undertook a detailed internal study and produced a thorough internal report about the risks in its mortgage business.<sup>40</sup> They studied actual prices, and actual profits and losses, instead of trusting ratings and models.<sup>41</sup> As a result, in December 2006, Goldman determined that it was too exposed to subprime mortgages, and it reduced that exposure.<sup>42</sup>

Goldman has been vilified for how it reduced its exposure to the mortgage market, particularly for selling approximately \$25 billion of CDOs during the eight months

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<sup>37</sup> See Joe Nocera, *Risk Management*, N.Y. TIMES, (Magazine) (Jan. 2, 2009), <http://www.nytimes.com/2009/01/04/magazine/04risk-t.html?pagewanted=print>.

<sup>38</sup> See *Wall Street and the Financial Crisis: The Role of Investment Banks: Hearing Before the Permanent Subcomm. on Investigations of the S. Comm. on Homeland Sec. and Governmental Affairs*, 111th Cong. 13, 97-98 (2010) [hereinafter *Hearings*] (testimony of David L. Sparks and testimony of Craig W. Broderick).

<sup>39</sup> Complaint at 5-6, SEC v. Goldman Sachs & Co., No. 10-03229 (S.D.N.Y. Apr. 16, 2010), available at <http://www.sec.gov/litigation/complaints/2010/comp-pr2010-59.pdf>.

<sup>40</sup> *Hearings*, *supra* note 38, at 95-96 (testimony of David Viniar); see also Nocera, *supra* note 37.

<sup>41</sup> See *Hearings*, *supra* note 38, at 95-96 (testimony of David Viniar); see also Nocera, *supra* note 37.

<sup>42</sup> See *Hearings*, *supra* note 38, at 4 (statement of Sen. Carl Levin, Chairman, S. Comm. on Homeland Sec. and Governmental Affairs); see also Stephen Foley, *Goldman Trims Sub-Prime Risk*, INDEPENDENT (Mar. 14, 2007), <http://www.independent.co.uk/news/business/news/goldman-trims-subprime-risk-440134.html>.

after it decided to reduce its positions.<sup>43</sup> Goldman paid \$550 million to settle SEC allegations that the firm failed to disclose information about CDO deals it sold to clients.<sup>44</sup> But whatever you might think of Goldman's behavior, these actions didn't cause the financial crisis. Indeed, Goldman was one of a handful of financial institutions that survived the crisis intact because it reduced its mortgage exposure in late 2006.

Goldman spotted the eight-hundred-pound gorilla in the financial markets in late 2006—the huge risk that a housing price decline would lead to highly correlated system-wide defaults, which would erode the value of subprime mortgages and particularly super-senior tranches of synthetic CDOs. Goldman Sachs avoided the kind of inattentive blindness that plagued other banks with exposure to these instruments. Goldman stepped back and questioned its own judgment. Now consider Citigroup as a counterexample to Goldman.

Citigroup made some of the most egregious mistakes of any financial institution during the crisis. Its board and executives made snap judgments based on intuition and mnemonics and did not undertake more thoughtful analysis. It lost billions of dollars on super-senior positions.<sup>45</sup> Citigroup's snap judgments and a failure to step back and think should have destroyed the firm.

Although the Financial Crisis Inquiry Commission report was a trifurcated political mess,<sup>46</sup> some of its hearings provided useful color, particularly about Citigroup. Citigroup's directors and officers accepted naïve risk management perspectives. For example, Robert Rubin, the former Treasury Secretary, who was paid more than a hundred million dollars in cash and stock during his eight years at Citigroup, testified that "I don't think anybody focused on the CDOs. This was one business in a vast enterprise, and until the trouble developed, it wasn't one that had any particular profile."<sup>47</sup> Rubin said he relied on Thomas Maheras. He said, "You know, Tom Maheras was in charge of trading. Tom was an extremely well regarded

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<sup>43</sup> FIN. CRISIS INQUIRY COMM'N, THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES 236 (2011) [hereinafter FCIC REPORT].

<sup>44</sup> *Id.* at 193.

<sup>45</sup> See Frank Partnoy, *Citigroup Bail-out Is Smart but Not Risk-Free*, FT.COM (Nov. 27, 2008, 7:07 PM), <http://www.ft.com/cms/s/0/2975ca48-bc99-11dd-9efc-0000779fd18c.html#axzz1bisJhX7h>.

<sup>46</sup> See Frank Partnoy, *Washington's Financial Disaster*, N.Y. TIMES, Jan. 30, 2011, at WK9.

<sup>47</sup> FCIC REPORT, *supra* note 43, at 262.

trading figure on the street. . . . And this is what traders do, they handle these kinds of problems.”<sup>48</sup>

What about Tom Maheras? Maheras, the co-CEO of Citigroup’s investment bank, made more than \$34 million in 2006 but admitted he spent “less than 1% of his time thinking about CDOs.”<sup>49</sup> Yet another of Citigroup’s managing directors, Susan Mills, had warned about the deteriorations in Citigroup’s subprime loan quality in early 2006.<sup>50</sup> This was the gorilla: default rates that were doubling or even tripling, that threatened Citigroup’s tens of billions of dollars of super senior CDO positions. Yet the senior managers didn’t see this weakness. They didn’t have the perspective Goldman did because they didn’t step back. Instead, they sold more CDOs and retained even more subprime risk. The Federal Reserve found that Citigroup’s senior management “did not appropriately consider the potential balance sheet implications of this strategy.”<sup>51</sup>

Why didn’t Citigroup see the gorilla? When we are distracted, we don’t see gorillas. I am using the term “gorilla” deliberately, to reference the visual awareness experiments at Harvard conducted by Christopher Chabris and Daniel Simons. Chabris and Simons showed their subjects a short film depicting two teams of people, one dressed in white and one in black, moving around and passing basketballs.<sup>52</sup> They asked their subjects to silently count the number of passes made by players wearing white shirts.<sup>53</sup> Halfway through the video, a student wearing a full-body gorilla suit walks in, stops in the middle of the players, thumps her chest, and walks off.<sup>54</sup> She spends nine seconds on screen, about one-sixth of the entire video.<sup>55</sup> Yet when Chabris and Simons queried their subjects after they watched the video, one-half of people did not notice the gorilla.<sup>56</sup> They had “inattention blindness.”<sup>57</sup> They devoted their attention to one part of the world, and did not recognize

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<sup>48</sup> *Id.*

<sup>49</sup> *Id.* at 198.

<sup>50</sup> *Id.* at 260.

<sup>51</sup> *Id.* at 199.

<sup>52</sup> CHABRIS & SIMONS, *supra* note 31, at 5.

<sup>53</sup> *Id.*

<sup>54</sup> *Id.* at 6.

<sup>55</sup> *Id.* at 5-6.

<sup>56</sup> *Id.* at 6.

<sup>57</sup> *Id.*

the striking events in the other part. Numerous studies have replicated this result.<sup>58</sup>

Goldman saw the gorilla; Citigroup did not. Numerous hedge funds saw the gorilla; regulators did not. The financial crisis boils down to a simple problem: not enough people saw the gorilla. This is the first sense of “Don’t Blink”—don’t let your attention lapse, stay focused on the important matters.

What, if anything, can securities regulation do about this problem? There are two things, and they are not new. Indeed, they are the twin pillars of the 1930s securities laws: mandatory disclosure and ex post anti-fraud enforcement.<sup>59</sup> As Enron illustrated, adequate disclosure does not mean burying opaque references in footnotes. Enron’s infamous footnote 16, which purported to disclose some of the firm’s off-balance sheet risks, set off a few reporters and short sellers, but it didn’t adequately inform investors of the firm’s risks in a salient way.<sup>60</sup> Likewise, Citigroup’s disclosure of subprime risk was impenetrable, buried in a web of complex off-balance sheet entities.<sup>61</sup>

If you want to ensure that people spot the gorilla, you have to tell them there might be a gorilla. Citigroup could have made its risks salient to investors and senior managers. If Citigroup had disclosed worst-case scenarios in its financial statements—that it would lose tens of billions of dollars if housing prices declined significantly—surely Bob Rubin and Tom Maheras would have paid more attention.<sup>62</sup>

According to Chuck Prince, Citigroup’s CEO, his and the firm’s decisions should not be criticized in hindsight. He said,

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<sup>58</sup> See *id.* at 39-40 (citing, among other examples, people who miss safety infractions right in front of them, high school teachers and administrators who fail to notice bullying, and fair-minded employers who do not notice discriminatory practices).

<sup>59</sup> Frank Partnoy & Lynn E. Turner, *Bring Transparency to Off-Balance Sheet Accounting*, in MAKE MARKETS BE MARKETS: THE REPORT (2010), available at <http://makemarketsbemarkets.org/report/MakeMarketsBeMarkets.pdf>

<sup>60</sup> See STAFF OF S. COMM. ON GOVERNMENTAL AFFAIRS, 107TH CONG., FINANCIAL OVERSIGHT OF ENRON: THE SEC AND PRIVATE-SECTOR WATCHDOGS 35-36 (Comm. Print 2002).

<sup>61</sup> See RooseveltNYC, *Frank Partnoy on Off-Balance Sheet Transactions (MMBM—Roosevelt Institute)*, YOUTUBE (Mar. 6, 2010), [http://www.youtube.com/watch?v=xpqYL\\_xEoVo](http://www.youtube.com/watch?v=xpqYL_xEoVo) (last visited July 30, 2011).

<sup>62</sup> Some have questioned whether the gorilla wasn’t missed, but rather ignored, largely due to the profitability of the risky investments before the crash. It remains unclear how many bank executives were consciously aware of their institutions’ risk exposure but were hubristic about the risk, or whether senior personnel really failed to understand the key mathematical algorithms. See Donald C. Langevoort, *Chasing the Greased Pig Down Wall Street: A Gatekeeper’s Guide to the Psychology, Culture and Ethics of Financial Risk-Taking*, 96 CORNELL L. REV. 1209, 1221-22 (2011).

If someone had elevated to my level that we were putting on a \$2 trillion balance sheet, \$40 billion of triple-A, zero-risk paper, that would not in any way have excited my attention. It wouldn't have been useful for someone to come to me and say, "Now, we have got \$2 trillion on the balance sheet of assets. I want to point out to you there is a one in a billion chance that this \$40 billion could go south." That would not have been useful information.<sup>63</sup>

This statement is hard to reconcile with Prince's 2006 comment: "When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing."<sup>64</sup>

What the FCIC investigators should have asked Prince was this: "What if someone had elevated to your level the risk that the bank would become insolvent if housing prices declined 30 percent? Would that have excited your attention? Would that have been useful information?" Worst-case scenarios are the gorillas of the financial markets, and they should be disclosed in far greater detail. Prince's reference to "complicated" in his "music" quote suggests that he was aware, at least in part, of these risks. In any event, even if the awareness was buried at a lower level within the bank, there should have been a mechanism that led to its disclosure.

Unfortunately, the Dodd-Frank Act and other reforms do not require disclosure of these kinds of facts, either to the public or to regulators. Some companies try to do this privately through risk management,<sup>65</sup> emulating Goldman Sachs. But securities regulation reform could help encourage managers and shareholders to engage in more long-term analysis than short-term intuition by requiring more robust and salient disclosure of worst-case scenarios.

The second pillar—antifraud—is also relevant. If the directors and officers of Citigroup are not held responsible for failures to disclose gorillas, why would they disclose gorillas? Yet private rights of action by shareholders have been substantially restricted in recent years,<sup>66</sup> and government prosecutions have not filled the gap. The early shareholder

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<sup>63</sup> FCIC REPORT, *supra* note 43, at 260.

<sup>64</sup> Langevoort, *supra* note 62, at 1224 (quoting Michiyo Nakamoto & David Wighton, *Bullish Citigroup Is 'Still Dancing' to the Beat of the Buy-Out Boom*, FIN. TIMES (London), July 10, 2007, at 1-1).

<sup>65</sup> *Fat-Tail Attraction: Investors' Interest in Hedging Tail Risk Is Growing*, ECONOMIST, Mar. 11, 2011, at 84.

<sup>66</sup> See, e.g., Private Securities Litigation Reform Act of 1995, 15 U.S.C. § 78u-4 (2006).

derivative litigation against Citigroup was dismissed,<sup>67</sup> it remains to be seen whether federal class actions against Citigroup, and other financial institutions, will fare better.<sup>68</sup> As of late 2011, there had been no major criminal cases against individual Wall Street employees.

Last year, the SEC civilly charged Citigroup with repeatedly making misleading statements about its exposure to subprime-mortgage-related assets. According to the SEC, "Between July and mid-October 2007, Citigroup represented that subprime exposure in its investment banking unit was \$13 billion or less, when in fact it was more than \$50 billion."<sup>69</sup> For that epic fraud, Citigroup paid a \$75 million penalty.<sup>70</sup> Its former chief financial officer Gary Crittenden agreed to pay \$100,000, and former head of investor relations Arthur Tildesley, Jr., agreed to pay \$80,000.<sup>71</sup> These numbers are obviously inadequate to deter financial fraud. If Citigroup and its executives had known these would be the penalties in advance, they would not have had any economic incentive to behave differently. A short-term-focused illegal decision is more profitable than a long-term-focused legal one.

Another useful policy tool would encourage market participants to rely, as Goldman did, on market measures of risk instead of ratings and financial models. The Dodd-Frank Act requires the elimination of regulatory references to ratings, and that important project is in progress.<sup>72</sup> The SEC has proposed rules for Forms S-3 and F-3 filings and related documents, based on the presence of a deep market for such seasoned issues,<sup>73</sup> but there is some reluctance to substitute

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<sup>67</sup> *In re Citigroup Inc. S'holder Derivative Litig.*, 964 A.2d 106, 140 (Del. Ch. 2009).

<sup>68</sup> See, e.g., *Securities Class Action Filings*, STAN. L. SCH. SEC. CLASS ACTION CLEARINGHOUSE, [http://securities.stanford.edu/fmi/xsl/SCACPUDB/recordlist.xml?-db=SCACPUDB&-lay=Search&case\\_type\\_SCAC\\_PRELIMINARYids=CREDIT&-sortfield.1=FIC\\_DateFiled&-sortfield.2=LitigationName&-sortorder.1=ascend&-max=100&-find](http://securities.stanford.edu/fmi/xsl/SCACPUDB/recordlist.xml?-db=SCACPUDB&-lay=Search&case_type_SCAC_PRELIMINARYids=CREDIT&-sortfield.1=FIC_DateFiled&-sortfield.2=LitigationName&-sortorder.1=ascend&-max=100&-find) (last visited Sept. 16, 2011) (compiling securities class action filings arising out of the financial crisis).

<sup>69</sup> Press Release, U.S. Sec. & Exch. Comm'n., SEC Charges Citigroup and Two Executives for Misleading Investors About Exposure to Subprime Mortgage Assets (July 29, 2010), available at <http://www.sec.gov/news/press/2010/2010-136.htm>.

<sup>70</sup> See Eric Dash & Louise Story, *Citigroup Pays \$75 Million to Settle Subprime Claims*, N.Y. TIMES, July 30, 2010, at B1.

<sup>71</sup> *Id.*

<sup>72</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 939, 124 Stat. 1376 (2010).

<sup>73</sup> Security Ratings, 76 Fed. Reg. 46,603 (Aug. 3, 2011) (to be codified at 17 C.F.R. pts. 200, 229, 230, 232, 239, 240, 249).



market-based measures of credit risk for ratings in regulation.<sup>74</sup> International regulators continue to rely on ratings.<sup>75</sup> The future of ratings in regulation remains unclear.

A market-based approach would improve risk-related incentives at financial institutions. Consider how much more difficult it would have been for Citigroup's CDO desk to take on large amounts of subprime risk in 2006 if—instead of reporting internally that the risk was triple-A, or better than triple-A, or that the probability of loss was one in a trillion according to the model—it had reported the market price of the risk and noted that the price had increased from ten to thirty basis points. Based on its valuation model in late August 2006, Citigroup reported that losses on its super senior tranches might range from \$15 million to \$2 billion.<sup>76</sup> Yet market prices, as reflected in credit default swaps, had already plummeted by that time. Markets are not always correct, of course, but market measures of risk can provide an early warning detector, a gut check, to help people avoid using their gut reactions in the wrong way. That is one reason why Goldman decided to reduce its exposure in December 2006, nearly two years before Lehman's bankruptcy.

Investment decisions based on ratings might not seem like high-speed snap decisions. But they are decisions that are made quickly in a relative sense. If people are accustomed to equating triple-A ratings with safety, then when they see *triple-A*, they will anchor around the idea that the triple-A-rated instrument is safe. Most of the decision about safety and risk is made immediately, at a pre-conscious level. Hopefully, the snap reaction that people have today to the triple-A symbol is dramatically more skeptical than the snap reaction people had a few years ago.

C. *Lehman's Bankruptcy and a Weekend at the Federal Reserve: The Second Sense of "Don't Blink"*

A different financial crisis decision was "Don't Blink"-like in the second sense I'm discussing, in that the decision was made too quickly. This is the decision, not by Lehman's traders about the bank, but about Lehman by its regulators. On

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<sup>74</sup> See Yali N'Diaye, *US SEC to Address Reliance on Credit Ratings Yet Again*, MARKET NEWS INT'L (Apr. 25, 2011, 2:49 PM) (on file with author).

<sup>75</sup> See, e.g., WALTER W. EUBANKS, CONG. RESEARCH SERV., R41467, THE STATUS OF THE BASEL III CAPITAL ADEQUACY ACCORD 11 (2010).

<sup>76</sup> FCIC REPORT, *supra* note 43, at 264.

September 10, 2008, the “[Federal Reserve Bank of New York] staff put together a draft gameplan for a ‘liquidity consortium’ of major Wall Street banks to provide a forum where these firms can explore possibilities of joint funding mechanisms to avert Lehman’s insolvency.”<sup>77</sup> But the gameplan provided that “[c]onsortium members would be given ‘[v]ery little advance’ notice, ‘2 hours max,’ in order to ‘minimize the risk of outside leaks.’”<sup>78</sup> Then, the consortium banks would have only the weekend—no longer—to perform due diligence on Lehman. If no plan emerged, the Federal Reserve officials would “reach out to regulators in DC and abroad to inform them of potential market disruptions at the opening of business on Monday.”<sup>79</sup>

On Friday night, September 12, 2008, twelve investment bank CEOs were summoned to the Federal Reserve’s headquarters at 33 Liberty Street in New York.<sup>80</sup> Over the weekend, they agreed to provide \$20 billion to support a purchase of Lehman by Barclays Capital.<sup>81</sup> But it was a deal that was doomed to fail—or at least doomed to fail by Monday. Barclays executives were not invited to the consortium meeting; they were separately conducting due diligence that night and over the weekend to decide whether to acquire Lehman.<sup>82</sup> Barclays made it clear that in order to guarantee Lehman’s financial obligations, a requirement of any deal, it would need shareholder approval, something that could not happen before Monday.<sup>83</sup> When British regulators confirmed that this requirement would hold, the deal fell through, and Lehman filed for bankruptcy on Monday.<sup>84</sup>

We can never know what might have happened if the government had waited a bit longer. Yes, the credit markets were tight during mid-September 2008. But interest rates were still relatively low. LIBOR was below five percent.<sup>85</sup> Would some parties have been willing to provide short-term loans at higher

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<sup>77</sup> Report of Anton R. Valukas, Examiner at 1517, *In re Lehman Bros. Holdings, Inc.*, 433 B.R. 113 (2010) (quoting FRBNY, Liquidity Consortium (Sept. 10, 2008), at 1 [FRBNY to Exam. 003517]).

<sup>78</sup> *Id.*

<sup>79</sup> *Id.* at 1520 (quoting FRBNY, Timeline—Liquidation Consortium (Sept. 11, 2008), at 2 [FRBNY to Exam. 003514]).

<sup>80</sup> *Id.* at 1524.

<sup>81</sup> *Id.* at 1528.

<sup>82</sup> *Id.* at 1524-25.

<sup>83</sup> *Id.* at 1527-28.

<sup>84</sup> *Id.* at 1527, 1535.

<sup>85</sup> *LIBOR Rates History: Historical LIBOR Rate Information*, FEDPRIMERATE.COM, [http://www.wsjprimerate.us/libor/libor\\_rates\\_history.htm](http://www.wsjprimerate.us/libor/libor_rates_history.htm) (last visited Oct. 19, 2011).

rates, or would the markets really have frozen? It is very possible. But regulators could step back and think about these possibilities. That weekend, they were trapped by a snap decision.

Although commentators disagree about a wide range of issues related to the collapse of Lehman, it is undeniable that the decisions about whether to rescue Lehman were made quickly, perhaps more quickly than any financial regulatory decisions in history. The overwhelming pressures from technology—e-mail, the web, computing power, smart phones—sped up the pace of responses. Regulators struggled to avoid the crush of this time pressure.

It is ironic that government officials, who so often are thought to act too slowly, should have acted so quickly under time pressure during the financial crisis. The problem is that regulators have not considered a challenge for all types of leaders in the modern technological age: how to manage delay. Some time-pressured scenarios are unavoidable, but the clear message of recent research is that they should be avoided whenever possible and that, to the extent they cannot be avoided, there should be emergency plans in place so that the senior regulators are experts, not novices, in crisis situations. Regulators, like market participants, should consciously address the art and science of delay.

## II. THE FLASH CRASH

The second “Don’t Blink” topic is the so-called “flash crash.” First, I describe the events of May 6, 2010, and discuss the role played by high-frequency trading. Then, I explain that regulation should frame these issues as part of the second sense of “Don’t Blink.” Finally, I propose two strategies to encourage delay: implementation of circuit breakers and the introduction of a lunch break.

### A. *A Thirty-Six Minute Roller Coaster*

At 2:32 p.m. on May 6, 2010, an employee of Waddell & Reed, a mutual fund company headquartered about a mile from my childhood home in Overland Park, Kansas, clicked *start* on a computerized trading software program.<sup>86</sup> The firm’s goal was

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<sup>86</sup> The details about the “flash crash” were reported in U.S. COMMODITY FUTURES TRADING COMM’N & U.S. SEC. & EXCH. COMM’N, FINDINGS REGARDING THE MARKET EVENTS OF MAY 6, 2010: REPORT OF THE STAFFS OF THE CFTC AND SEC TO THE

to reduce its exposure to \$4.1 billion of stocks it owned by selling something called “E-Mini” futures contracts.<sup>87</sup> The “E-Mini” is based on the Standard & Poor’s 500 Index of top stocks, except that it is traded in small amounts (hence, “Mini”), and it goes through an electronic trading platform instead of the frenzied “open outcry” method still used for other futures contracts (hence, “E”). To hedge \$4.1 billion of stocks, Waddell & Reed would need to sell 75,000 E-Mini contracts.<sup>88</sup>

Instead of having its own employees manually enter these orders or calling a broker, Waddell & Reed used this automated computer program.<sup>89</sup> Each minute, the program calculated the number of E-Mini contracts traded during the previous minute.<sup>90</sup> It then automatically sold nine percent of that number.<sup>91</sup> The program was designed to take several hours, or perhaps even days, to sell 75,000 E-Mini contracts.<sup>92</sup>

Instead, the program triggered the fastest roller coaster ride in the history of financial markets. At first, when Waddell & Reed’s computers started to sell, high-frequency traders, with their own computer programs, stepped in to buy. The market was calm and balanced—for about nine minutes.<sup>93</sup>

But after nine minutes, at 2:41 p.m., high-frequency traders began selling the contracts they had accumulated in order to zero-out their positions.<sup>94</sup> High-frequency traders do not typically maintain significant long or short positions for more than a few minutes.<sup>95</sup> During the first minute of their switching sides, trading volume increased, and Waddell & Reed’s automated program responded by selling a larger number of E-Mini contracts.<sup>96</sup> Then, in the second minute, more traders sold, and so did the automated program.<sup>97</sup> During the third and fourth minutes, everyone sold even more, in a kind of high-speed computerized trading death spiral.<sup>98</sup>

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JOINT ADVISORY COMMITTEE ON EMERGING REGULATORY ISSUES (2010) [hereinafter CFTC/SEC FINDINGS].

<sup>87</sup> *Id.* at 2.

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> *Id.* at 2-3.

<sup>94</sup> *Id.* at 3-4.

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

By 2:45 p.m., trading volume was exploding, and the E-Mini futures contract was collapsing.<sup>99</sup> Its price had fallen 5 percent in just thirteen minutes.<sup>100</sup> The high-frequency computer programs were a large share of the market at this time.<sup>101</sup> During one fourteen-second period, high-frequency traders accounted for 27,000 E-Mini contracts, about half of the total trading volume.<sup>102</sup>

The decline in the E-Mini contracts instantly spread to the rest of the market. Some of the contagion was bizarre, even inexplicable. Some was due to “stub orders” set at absurdly low prices. Some was due to computer algorithms that hadn’t anticipated this kind of shock. Many high-frequency traders exited their positions entirely, running for the virtual hills. Stock indices other than the E-Mini also collapsed, as did individual stocks. At 2:47 p.m., shares of Accenture plc, the consulting firm, fell from nearly \$40 to \$30, and then suddenly—in just seven seconds—plummeted to one cent.<sup>103</sup> A few minutes later, shares of Procter & Gamble, the consumer products company, fell from more than \$60 to \$40.<sup>104</sup> Shares of blue-chip companies such as IBM, Apple, 3M, and General Electric also declined abruptly.<sup>105</sup>

But then, just as fast, the market snapped to life. Accenture traded near \$40 again; Procter & Gamble was back above \$60.<sup>106</sup> Within minutes, the E-Mini contract and all these stocks recovered. By 3:08 p.m., the market settled, and prices were about the same as they were before Waddell & Reed started the computer program.<sup>107</sup> The program had finished selling 75,000 E-Mini contracts, and then, by instruction, it shut down. The entire ride, the bust and boom now known as the “flash crash,” had taken just thirty-six minutes.

### *B. High-Frequency Trading*

Many critics have blamed high-frequency traders for the flash crash. They say high-frequency trading is socially wasteful and dangerous. Yet there is overwhelming empirical

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<sup>99</sup> *Id.* at 4.

<sup>100</sup> *Id.*

<sup>101</sup> *Id.*

<sup>102</sup> *Id.* at 3.

<sup>103</sup> *Id.* at 83.

<sup>104</sup> *Id.* at 84-85.

<sup>105</sup> *Id.* at 85-86.

<sup>106</sup> *Id.* at 84.

<sup>107</sup> *Id.* at 16.

evidence showing that under “normal” conditions high-frequency traders constitute a powerful positive force in the markets. So-called low-latency trading improves traditional yardsticks for market quality, such as liquidity and short-term volatility.<sup>108</sup> Recent empirical work shows that high-frequency traders did not trigger the flash crash.<sup>109</sup> The trigger was the computer program at Waddell & Reed.

However, the evidence also shows that during periods of high market uncertainty—such as May 6, 2010—high-frequency trading is associated with increased volatility.<sup>110</sup> High-frequency trading appears to be most dangerous when new information is entering the market, when it can cause prices to swing more dramatically.<sup>111</sup>

High-frequency trading is a dominant force in modern markets. Estimates suggest that it accounts for almost three-quarters of dollar trading volume in the United States.<sup>112</sup> As the SEC has recognized, proprietary high-frequency traders have largely replaced specialists and market makers in stock trading.<sup>113</sup> High-frequency traders’ strategies vary widely, and some are more defensible than others.<sup>114</sup>

High-frequency trading isn’t going away. So what should be done about it? First, it is worth noting that just as computers have beaten human beings at chess and on

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<sup>108</sup> Joel Hasbrouck & Gideon Saar, *Low-Latency Trading* 22-24 (Johnson Sch. Research Paper Series, Working Paper No. 35-2010, 2011), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1695460](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1695460); see also Jonathan A. Brogaard, *High Frequency Trading and Its Impact on Market Quality* 33-40 (Nov. 22, 2010) (unpublished manuscript), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1641387](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1641387).

<sup>109</sup> See Andrei Kirilenko et al., *The Flash Crash: The Impact of High-Frequency Trading on an Electronic Market* (May 26, 2011) (unpublished manuscript), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1686004](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1686004).

<sup>110</sup> Frank Zhang, *High-Frequency Trading, Stock Volatility, and Price Discovery* 2 (Dec. 2010) (unpublished manuscript), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1691679](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1691679).

<sup>111</sup> *Id.* at 3.

<sup>112</sup> In December 2009, Reuters put that number at 60 percent of all domestic equity, though some estimates of the overall market share of high-frequency trading are even higher. Jonathan Spicer & Herbert Lash, *Who’s Afraid of High-Frequency Trading?*, REUTERS (Dec. 2, 2009, 10:38 AM), <http://www.reuters.com/assets/print?aid=USN173583920091202>; see also Andrew Haldane, Exec. Dir. Fin. Stability, Bank of Eng., *The Race to Zero*, Address at the International Economic Association Sixteenth World Congress 4 (July 8, 2011), available at [www.bankofengland.co.uk/publications/speeches/2011/speech509.pdf](http://www.bankofengland.co.uk/publications/speeches/2011/speech509.pdf).

<sup>113</sup> Concept Release on Equity Market Structure, Exchange Act Release No. 61,358, 97 SEC Docket 2115 (Jan. 14, 2010).

<sup>114</sup> James J. Angel & Douglas M. McCabe, *Fairness in Financial Markets: The Case of High Frequency Trading* 23 (Dec. 21, 2010) (unpublished manuscript), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1737887](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1737887).

*Jeopardy*, it is unlikely that human regulators would have much of a chance against high-speed computer trading software. These algorithms move and change too quickly for regulators to act or react in any meaningful way. By the time the SEC/CFTC report on the flash crash was published on September 30, 2010, market participants already had switched to new strategies. No one would use Waddell & Reed's trading program today. The algorithms that worked last month probably no longer work.

Nevertheless, regulators can try to play the same role they have played in markets generally, even when they are outmatched. No one believes that prosecutors can stamp out all insider trading, but most people still favor some regulatory efforts to deter insider trading.

Likewise, the government can bring cases against high-frequency traders who violate the law. It is unclear how much high-frequency trading is illegal.<sup>115</sup> It probably isn't a large percentage, but it isn't zero, either. But for these kinds of illegal, fraudulent, and manipulative activities, there is not a need for new statutes or regulations. Front running and insider trading are already illegal under current law.<sup>116</sup> If regulators are unable to bring cases against illegal high-frequency trading, a new regulatory regime might defer to private rights of action. If investors are disadvantaged by high-frequency traders, one way to police the practice would be through a private attorney-general role. To the extent high-frequency traders are engaged in manipulative market practices, regulators should either prosecute that activity or encourage private actions that deter it.

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<sup>115</sup> For example, there is an ongoing debate about the extent to which high-frequency traders engage in front-running through flash orders or quickly-cancelled "stub" orders, or possibly "quote stuffing," a practice in which hedge funds allegedly flood the markets with information to create arbitrage opportunities. *See, e.g., S.E.C. to Study Rapid-Fire Stock Orders*, N.Y. TIMES, Sept. 7, 2011, at B9, available at <http://www.nytimes.com/2010/09/08/business/08sec.html> (describing examinations of quote stuffing); Alexis Madrigal, *Explaining Bizarre Robot Stock Trader Behavior*, ATLANTIC (Aug. 6, 2010), <http://www.theatlantic.com/technology/print/2010/08/explaining-bizarre-robot-stock-trader-behavior/61028/> (describing the position that quote stuffing does not occur).

<sup>116</sup> *See* 17 C.F.R. § 240.10b-5 (2010).

C. *Lunch Breaks and Circuit Breakers: The Second Sense of "Don't Blink"*

The other—and perhaps even more important—policy for regulators to implement is a “Don’t Blink” strategy. They should encourage delay. Indeed, regulators should heed one of the lessons that market participants in the high-frequency trading area are learning: a crucial element of successful trading is delay management. For some strategies, it is best to be first. But for other strategies, it is better to wait a little bit. There are various catch phrases that describe this, like “the first-mover disadvantage” or, conversely, “the second-mover advantage.” Or “the second mouse gets the cheese.” A complete analysis of this phenomenon is beyond the scope of this article, so I will simply note that UNX, a high-frequency trading firm, was ranked as the top execution-only broker in numerous trading categories from 2005 through mid-2007, and one major reason for its success was that its trading executive was slightly delayed, by a few dozen milliseconds.<sup>117</sup>

Regulators follow the lead of this private market philosophy and slow down the markets by introducing explicit pauses. One of this article’s themes is that decision makers should take time to step back and think. Yet given the speed of modern markets, there is little time for market participants to do that. Regulators could create more time with circuit breakers.

Regulators have introduced circuit breakers already to force markets to shut down when they have declined by certain specified amounts. After the flash crash, the SEC adopted a pilot program to introduce a five-minute pause if the price of any stock in the S&P 500 Index fell by 10 percent or more during a five-minute period. After the five-minute pause, the primary listing market would use an auction process to determine the new opening price.<sup>118</sup> In September 2010, the pilot program was expanded to the Russell 1000 Index and some exchange traded funds. Trading would halt for five minutes.<sup>119</sup> These pauses are a

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<sup>117</sup> Isabelle Clary, *Familiar Names Lead Best-Execution List*, PENSIONS & INVESTMENTS, June 11, 2007, at 2, available at <https://www.fidelitycapitalmarkets.com/newsdocs/Pension%20&%20Investments%20Reprint.pdf>; see also UNX, Inc., Plexus BrokerEDGE Monitor, Apr. 2006, available at [http://www.unx.com/pdf/Q1\\_Q4\\_2005\\_UNX\\_Inc.pdf](http://www.unx.com/pdf/Q1_Q4_2005_UNX_Inc.pdf); Interviews with Former UNX Managers (2011) (on file with author).

<sup>118</sup> See Joint Industry Plan, Exchange Act Release No. 64,547, 2011 WL 2098082, ex. A at 12-13 (May 25, 2011), available at <http://www.sec.gov/news/press/2011/2011-84-plan.pdf>.

<sup>119</sup> Other post-crash solutions include a “limit up-limit down” mechanism that prevents trading outside of a set price band, the elimination of stub quotes, and the use of an



sensible supplement to the circuit breakers that apply generally during major market downturns.

But it is also worth asking more generally if markets would benefit from the introduction of longer pauses, of breaks during the day designed to encourage thinking and deliberation before action. When I worked in Morgan Stanley's Tokyo office during the 1990s, I was struck by the impact of the ninety-minute lunch break on trading. Not that Morgan Stanley's traders were models of propriety during lunch: some of the most egregious trades described in my book *F.I.A.S.C.O.* were created in Tokyo, and were conceived during those breaks.<sup>120</sup>

Still, as a general matter, Tokyo's pause in market trading led to more rational thinking about the trading day and often helped cooler heads prevail. During the morning's two-hour trading session, traders and salespeople focused on prices and deals. There was relentless pressure to execute. But then there was a break from 11:00 a.m. until 12:30 p.m. During that time, traders, salespeople, and clients had conversations that actually lasted for more than a few seconds. They pondered new investment strategies or ideas. They read. Sometimes during the lunch break they even had lunch. Following this break, there was another two-and-a-half hour trading session during the afternoon. The stock exchanges in Hong Kong, Shenzhen, and Singapore followed a similar approach, with ninety-minute, mid-day breaks. In contrast, all the world's other stock exchanges, including those in the United States, have been and are still open continuously from the morning until the closing bell.

Unfortunately, the Asian markets are now moving toward the Western model. In February 2011, the Tokyo Stock Exchange announced that it would shorten its lunch break by thirty minutes beginning in May, shifting the start of lunch back to 11:30 a.m. from 11:00 a.m.<sup>121</sup> Some commentators criticized the move. One market participant suggested that extending the time for trading probably would not boost volume because "trading tends to focus around the beginning and end

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audit trail to detect disturbances in the market. *See id.* at 7, 10; *see also* Michael Mackenzie & Telis Demos, *Fears Linger of New Flash Crash*, FT.COM (May 5, 2011, 6:23 PM), <http://www.ft.com/intl/cms/s/0/d18f3d28-7735-11e0-aed6-00144feabdc0.html#axzz1OorJDaYi>.

<sup>120</sup> *See generally* FRANK PARTNOY, *F.I.A.S.C.O.: BLOOD IN THE WATER ON WALL STREET* (1997).

<sup>121</sup> Takako Iwatani & Kana Nishizawa, *Tokyo Bourse Will Start Shorter Lunch Break on May 9*, BLOOMBERG (Feb. 6, 2011, 11:08 PM), <http://www.bloomberg.com/news/2011-02-07/tokyo-bourse-will-start-shorter-lunch-break-on-may-9-tse-says.html>.

of trading sessions.”<sup>122</sup> Interestingly, 70 percent of corporate and individual investors opposed the plan to extend trading hours.<sup>123</sup> Yet it passed.

A typical law review article about financial market regulation might propose an intricate and complex reform of computer algorithm-driven trading. Instead, let me offer a more basic reform idea: force traders to break for lunch. I favor the introduction of a lunch break at the New York Stock Exchange and NASDAQ.

A lunch break would create a much-needed pause for reflection and thought during the trading day. Breaks have the additional benefit of creating another opening time, after lunch, when prices would be set based on a pool of bids and offers. At the extreme, the modern trading day might consist simply of two or three brief auctions, with breaks between them. Critics will argue that there would be less liquidity under such a regime, and there very well might. Only an experiment could answer questions about this concern. But the benefits of giving market participants more time to engage in thoughtful discourse and analysis could substantially outweigh any potential loss of liquidity.

Moreover, it is worth asking how much liquidity is necessary in today's securities markets. How often do even the most active traders need to move in and out of positions at particular moments during the day? Most high-frequency traders maintain a flat trading profile, and they zero-out positions right away, or at the latest by the end of the day. Few fundamental traders need to move the bulk of their positions at particular times. And introducing pauses could also deter retail investors from day trading, which is an addictive (and on balance a destructive and losing) strategy. Intraday pauses could create time for people to engage in more productive uses of their time.

Imagine this thought experiment. What if you could trade in U.S. equities or any financial instrument whose value is derived from U.S. equities for only one hour in the morning and one hour in the afternoon? Trades at any other time would be unenforceable. Any purchases and sales during paused periods would be void. Or, in a less extreme version, trades during paused periods could be subject to a transaction tax. Of course, there would be pressure for trades to occur outside of

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<sup>122</sup> *Id.*

<sup>123</sup> *Most Investors Oppose Ending TSE Lunch Break*, JAPAN TIMES ONLINE (Sept. 25, 2010), <http://search.japantimes.co.jp/cgi-bin/nb20100925a4.html>.

this legal framework for so-called regulatory arbitrage. The policy would require international coordination, but that is getting easier as the major exchanges merge. What if each of the major global markets agreed to trade for an hour or two only, and refused to enforce trades outside those time periods?

Many market participants would complain about a reduction in liquidity. And perhaps they would be right. But liquidity at what cost? And why would one conclude that there would be greater liquidity during a twenty-four hour, constant international trading day, which is where current trading trends are headed? There is a strong argument and evidence that constant trading merely gives the illusion of liquidity.

For example, one lesson from the flash crash is that the supposed liquidity provided by high-frequency traders and others can evaporate very quickly. When there is an error—the next Waddell & Reed program, or the next extra-zero input by a “fat finger”—it will occur at a random time, when liquidity will be limited. Wouldn't it be better for such errors to occur during a compressed timeframe, when everyone is trading? On a per-trading-moment basis, there arguably should be greater market depth and liquidity after the timing of trading is restricted. Indeed, limiting trading hours might be an especially good idea for less liquid stocks, which would have deeper markets, albeit for a shorter time. The major disadvantage would be that some people who want to trade a few hours earlier will not be able to do so. But who fits within that category?

Interestingly, the SEC/CFTC investigation of the flash crash indirectly supports this pause idea: “Another key lesson from May 6 is that many market participants employ their own versions of a trading pause—either generally or in particular products—based on different combinations of market signals.”<sup>124</sup> The study confirmed that “a liquidity crisis can develop if many market participants withdraw at the same time.”<sup>125</sup> Much good

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<sup>124</sup> CFTC/SEC FINDINGS, *supra* note 86, at 6. The SEC and CFTC recommend additional safeguards related to the five-second trading limit and the limit up-limit down process, as well as expanding the scope of existing circuit breakers, in a set of additional recommendations published on February 18, 2011. See JOINT ADVISORY COMM. ON EMERGING REGULATORY ISSUES, RECOMMENDATIONS REGARDING REGULATORY RESPONSES TO THE MARKET EVENTS OF MAY 6, 2010: SUMMARY REPORT OF THE JOINT CFTC-SEC ADVISORY COMMITTEE ON REGULATORY ISSUES 4-5 (2011). Interestingly, the number of circuit breaker halts appears to have increased recently. See Nick Baker, *Clearwire Is Latest Stock Halted by Circuit Breakers*, BLOOMBERG (Feb. 4, 2011, 11:41 AM), <http://www.bloomberg.com/news/2011-02-04/clearwire-is-latest-stock-halted-by-circuit-breakers-table-.html>.

<sup>125</sup> CFTC/SEC FINDINGS, *supra* note 86, at 6.

policy comes from market-based insights. If markets are pausing, shouldn't regulators?

One final point: although circuit breakers are designed to kick in only when markets are collapsing, why should they have effect only in times of downward stress? The dot.com and housing bubbles are just the latest examples of the dangers associated with rapid moves up as well as down. Perhaps if market participants paused when markets surged they might question more why markets were surging.

#### CONCLUSION

Delay plays an important, though often hidden, role in financial markets and financial market regulation. Delay management can be an important policy tool for regulators. But rather than conclude by repeating my thoughts about delay and securities regulation, I want to make the point in a more oblique way, by explaining briefly how the idea of "Don't Blink" applies to the writing of this article.

Professor James Fanto first contacted me about the Pomerantz lecture during mid-September 2010, and we agreed on a lecture date of March 15, 2011. That gave me six months to prepare for the talk. We discussed possible topics, and I promptly did nothing about the lecture for nearly two months.

The topics went into my deep subconscious, where they brewed until early November 2010, when I received an e-mail from Elizabeth Alper of Brooklyn Law School requesting that, by November 15, I confirm the title and write a brief description of the topic for publicity materials. The topic bubbled in my brain for a while. I did some research, and generally spent more time reading about the financial crisis and the flash crash. I wrote a paragraph about the talk, and finally signed off on the description on December 3, 2010, more than two weeks late. (I don't want to mention how long I took to complete speaker permission and expense forms; that is just too embarrassing.)

I was still nowhere near starting to draft this article, though I was reading and researching the two topics more, and I was getting a better idea of what I would cover. I hired two research assistants to help me gather background materials for each topic.

Then, after the winter break, on February 9, 2011, Jim Fanto sent me the following gentle e-mail reminder: "What do you think? The talk is on Mar. 15. Kristin and Kent are

expected to give about 5–10 minutes each of comments. Can you give them something two weeks before? One week before?” I responded that I would send them something by March 1, stating that “I’m working on it and will get all of you something as soon as I can.” I read and researched more, and I thought more. I began to outline some of my thoughts.

March 1 passed and I still hadn’t begun drafting the article, though I now had a decent idea of what I planned to say and I understood the details about the financial crisis and the flash crash reasonably well. I was scheduled to give a talk to my law school’s board of visitors on March 4th, so I decided to discuss the timing of the Pomerantz lecture and how I hadn’t yet started writing the article in the context of a larger book project on the role of delay in decision making (which I had also barely started, and which was due in a few months). Later that day, Elizabeth Alper sent me a reminder e-mail that the lecture would be on March 15. Then, I shifted gears and worked furiously for a week. On March 10, I circulated a draft of the talk, which I continued to edit during the remaining days. Jim Fanto, Kent Greenfield, and Kristin Johnson were all gracious enough not to mention that I had given them only a few days to prepare a response to my draft (though, in my defense, they had a general idea of what I would cover well before that, and I believe they would not have begun preparing their comments until after March 10 in any event).

Next, immediately after the talk, I met Shawna MacLeod, the Editor-in-Chief of this law review. A week later, as promised, she sent me a detailed note about timing, giving me the choice of sending a first round draft on May 27 or a final manuscript on July 15. I chose the latter. Then I promptly did nothing for a month. She sent a follow-up e-mail on June 20, with eight apparently strict deadlines that would follow soon after I delivered the manuscript.

After the Fourth of July weekend, I finally went through all the materials my research assistants had gathered, and I spent the next eleven days finishing the research and writing of the article. The editorial process then went smoothly, and we approved the final manuscript on November 11.

I include all of this detail for two reasons. First, I know from discussions with many other academics that my various delays, though they might seem like irresponsible procrastination to people with real-world jobs, actually are consistent with a common and reasonable approach to scholarly writing. If I had written this article right away, I

would have missed many important details, thoughts, and research. I would not have had the opportunity to let the ideas brew for several months before putting them down on paper. Waiting until the last minute isn't always bad; it is often precisely what we should be doing: taking as long as we possibly can to consider a research project and then finishing at the last possible moment at the highest possible speed.

Second, I want to set forth the details of this account to remind academics that, although the Internet and the temptations of publishing in speedier venues are attractive alternatives to the slower pace of traditional academic articles and books, there are benefits to longer-form, longer-term writing that these other media do not have. The academics' comparative advantage is to take more time, to think through complex issues more deeply than others. Given the increasing speed of other approaches to writing, more leisurely-paced scholarship in academic articles and books is increasingly important today. That isn't to say that academics should avoid writing for other media, but rather that there is a special place for delayed thinking.

If the snooty lawyer confronting Abe Pomerantz in the story at the beginning of this article had taken more time to think, he would not have insulted Abe—he would have thanked him for suing his clients. Many lawyers, plaintiff- and defense-side alike, make judgments about the other side based on limited information. We all are prone to biases and cognitive error. But a fairer, more experienced counsel would have understood that securities litigation can and often does serve an important social purpose—deterring the fraudulent conduct that threatens investors and markets. Or at least he would have understood that without plaintiffs' lawyers he would not have a job.

If we learn no other lesson from the recent financial crisis and the flash crash, hopefully lawyers and regulators—and academics—will understand that there are dangers associated with snap decisions, and that we should include timing and delay among the factors that matter in regulating financial markets.