

# HIGH-POWERED (MIS)INCENTIVES AND VENTURE-CAPITAL CONTRACTS

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## I. INTRODUCTION

Venture capitalists are a major source of funding for start-up firms.<sup>1</sup> As a general matter, entrepreneurs find it difficult to borrow money from banks or sell shares directly to the public until they have finished their innovation and acquired a sufficiently large market share.<sup>2</sup> Venture capitalists bridge this gap by acting as financial intermediaries: they raise capital from investors, such as large institutions, and use it to identify, finance and monitor entrepreneurs with promising innovations.<sup>3</sup> In return for its investment, a venture capitalist receives equity in the start-up and myriad other contractual rights. These rights are set forth in a series of complex contracts between the entrepreneur and venture capitalist (collectively, "venture-capital contracts"). These contracts include a number of provisions meant to reduce the opportunistic behavior of entrepreneurs by exposing them to high-powered incentives and giving the venture capitalist control over the start-up, including the power to fire entrepreneurs and dilute their equity holdings.<sup>4</sup>

The venture-capital literature has explained these one-sided features of venture-capital contracts as rational, well-tailored reactions to informational

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<sup>1</sup> See DOUGLAS J. CUMMING & SOFIA A. JOHÁN, VENTURE CAPITAL AND PRIVATE EQUITY CONTRACTING: AN INTERNATIONAL PERSPECTIVE 32–44 (2009) (providing an overview of the literature).

<sup>2</sup> See Bernard S. Black & Ronald J. Gilson, *Venture Capital and the Structure of Capital Markets: Banks Versus Stock Markets*, 47 J. FIN. ECON. 243 (1998).

<sup>3</sup> Financial intermediaries help facilitate exchanges between parties with different transactional information, liquidity preferences, tolerance for risk and abilities to hedge. Not all institutions provide clients with the full menu of intermediation services, but modern intermediaries have become more homogeneous, a product of increased competition brought about by deregulation. See XAVIER FREIXAS & JEAN-CHARLES ROCHET, MICROECONOMICS OF BANKING 15 (1997) (defining a "financial intermediary" as a financial institution that "specializes in . . . buying and selling (at the same time) financial contracts and securities" and is in the business of transforming financial inputs into outputs); Robert C. Merton, *A Functional Perspective of Financial Intermediation*, 24 FIN. MGMT. 23, 24–28 (1995) (describing the various roles of financial intermediaries, including designing and facilitating transactions in financial securities that are not amenable for trading in organized markets due to transaction costs and informational asymmetries).

<sup>4</sup> See William A. Sahlman, *The Structure and Governance of Venture Capital Organizations*, 27 J. FIN. ECON. 473, 506 (1990) (arguing that venture capitalists "structure their investments so as to keep firm control").

asymmetries faced by venture capitalists.<sup>5</sup> But shifting ex post bargaining power so drastically in favor of venture capitalists has an unfortunate side effect: it provides them with great leeway to act opportunistically at the entrepreneur's expense. Opportunistic behavior creates deadweight losses for society. From a social-welfare-maximizing perspective, the optimal contract would reduce the sum of the welfare losses from the opportunism of both venture capitalists and entrepreneurs. While our understanding of venture-capital contracts has increased greatly in the last twenty years, we still do not have a sufficiently good grasp of how to accomplish this.

This Article examines the dynamics of this fundamental tradeoff between entrepreneurial and venture-capitalist opportunism. It shows that standard venture-capital contracts tip the scales in favor of venture-capitalist opportunism, but leave open the possibility for self-preserving strategic behavior by entrepreneurs that can reduce the joint welfare of both parties. It also identifies a number of factors that make it difficult for venture capitalists to modify the standard contracts in order to reduce these welfare losses.

Part II provides an overview of entrepreneurial opportunism and the way that standard venture-capital contracts deal with the problem. Part III examines some of the unintended side effects of the high-powered incentives used by venture capitalists. Part IV identifies various roadblocks to the emergence of optimal venture-capital contracts. Part V discusses various ways in which legal rules can help reduce the misincentives created by standard venture capital contracts. Part VI concludes.

## II. CONTRACTS BETWEEN ENTREPRENEURS AND VENTURE CAPITALISTS

Whenever one individual acts on behalf of another, a potential agency problem arises: the agent—the person acting—will undoubtedly have interests incongruous with those of her principal. All things being equal, one would expect that a bona fide, self-interested agent will act in a self-serving manner.<sup>6</sup> When a venture capitalist invests in a start-up, it “hires” the entrepreneur to act as its agent, instructing her to use the invested funds to finish and market the innovation within a set time period. The venture capitalist wants to be able to harvest its investment or, if things are not progressing well, to liquidate the firm, in both instances, sooner rather than

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<sup>5</sup> See Paul Gompers, *Venture Capital*, in HANDBOOK OF CORPORATE FINANCE 483, 494 (B. Espen Eckbo ed., 2007) [hereinafter *Venture Capital*] (arguing that venture capital can provide the most value by investing in start-up firms where informational asymmetry problems are particularly acute).

<sup>6</sup> See Joseph E. Stiglitz, *Principal and Agent*, in THE NEW PALGRAVE: ALLOCATION, INFORMATION, AND MARKETS 241, 241–42 (John Eatwell et al. eds., 1st ed. 1989) (discussing the sources of agency problems and various approaches available to try to reduce agency costs).

later. On the other hand, entrepreneurs often prefer a slower, more deliberate pace, particularly if it requires them to exert less effort or yields a higher expected return in the long-run, and for the firm to continue in existence even if it is performing poorly. A venture capitalist, like any other principal, will want to identify these agency risks and ways of dealing with them. As we will now see, venture-capital contracts are usually explained as a reaction to the special agency problems faced by investors in innovation-intensive start-ups.

#### *A. Agency Risks Faced By Venture Capitalists*

There are two principal reasons why investments in innovation-intensive start-ups are particularly risky: the uncertainty surrounding the innovation process and risks associated with the intangible nature of innovations<sup>7</sup>; and the general informational asymmetry between an entrepreneur and a venture capitalist.

##### *1. The Nature of Start-Ups*

New ventures are by nature risky, and both those within and outside the firm will often be uncertain about its actual prospects, including whether it will be able to attract customers and investors. Innovation-intensive firms are even riskier. This is due in part to uncertainties surrounding the technical viability and market potential of innovations and whether competitors will vie for a share of the new market.<sup>8</sup> Moreover, the principal assets of these firms are intangible in nature—e.g., the entrepreneur's human capital and intellectual property, such as patents and trade secrets.

As a general matter, firms with tangible assets pose fewer risks to investors. Tangible assets, such as manufacturing equipment, provide investors who control the firm with bargaining power over the entrepreneur, whose access to the assets is subject to the investors' continuing consent.<sup>9</sup> Such assets are also easier to value and sell than intellectual property and other types of intangible assets. This makes it easier for the investors of a failing firm to recuperate some of their investment by taking possession of the assets. Finally, to the extent that a firm's fortunes are intricately tied to an employee's human capital, the employee may be able to renegotiate its contract with investors merely by threatening to quit the firm. The magnitude of this hold-up problem will depend on the outside options

<sup>7</sup> See PAUL GOMPERS & JOSH LERNER, *THE VENTURE CAPITAL CYCLE* 127 (1999) (stating that young companies bringing new products to the market are inherently risky).

<sup>8</sup> See Bengt Holmstrom, *Agency Cost and Innovation*, 12 J. ECON. BEHAV. & ORG. 305, 309 (1989).

<sup>9</sup> See OLIVER HART, *FIRMS, CONTRACTS, AND FINANCIAL STRUCTURE* 56–58 (1995) (arguing that the ownership of tangible assets helps reduce the hold-up risks posed by employees threatening to quit a venture).

available to the employee and the extent to which the venture has transformed that human capital into sellable assets, such as intellectual property, goodwill and actual tangible assets.<sup>10</sup>

## 2. *The Informational Asymmetry Problem*

An entrepreneur trying to attract investors faces an adverse selection problem, given that she has private information about the true value of the venture, including the viability of the innovation and the skills and industriousness she will bring to bear once the investors are on board. Knowing that they lack such information, investors will discount for the risk that they are buying into a "lemon."<sup>11</sup> This discounting hurts "good" entrepreneurs.<sup>12</sup> If "good" entrepreneurs are unable to credibly communicate their private information,<sup>13</sup> they will either cross-subsidize "bad" entrepreneurs, or, if the discount is too great, have to generate the funds internally<sup>14</sup> or pass-up valuable projects.<sup>15</sup>

Even if an entrepreneur is able to attract investors, the parties still have to address a second informational asymmetry problem, known as "moral hazard."<sup>16</sup> Since a venture capitalist is not involved in the day-to-day managing of the venture, it will not have first-hand knowledge of how

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<sup>10</sup> See Benjamin Klein, Robert G. Crawford & Armen A. Alchian, *Vertical Integration, Appropriate Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978).

<sup>11</sup> See George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488 (1970) (setting forth standard treatment of adverse selection problem in context of used car dealers, which have informational advantage over potential purchasers of "lemons").

<sup>12</sup> Good firms raise capital to finance valuable projects or for other well-founded business reasons; bad firms raise capital to take advantage of potential investors, either because the firm is overvalued or the insiders are engaged in self-dealing. See JEAN TIROLE, *THE THEORY OF CORPORATE FINANCE* 237 (2006) (discussing good and bad reasons why firms seek outside funding).

<sup>13</sup> To achieve this, "good" entrepreneurs must be able to send a signal that cannot be mimicked by "bad" entrepreneurs. See Raphael Amit, Lawrence Glosten & Eitan Muller, *Entrepreneurial Ability, Venture Investments, and Risk Sharing*, 36 MGMT. SCI. 1232 (1990) (setting forth an adverse selection model in the context of venture capital financing).

<sup>14</sup> Given the adverse selection problem firms will often resort to a pecking order when deciding how to finance a project—first relying on internal financing, then on debt and finally on equity. Debt is preferred to equity since it has priority; thus, all other things being equal, a debtholder who invests in an overvalued firm is harmed less than an equityholder. See Stewart C. Myers, *The Capital Structure Puzzle*, 39 J. FIN. 575 (1984).

<sup>15</sup> See TIROLE, *supra* note 12, at 242–44 (discussing cases in which a good firm will agree to cross-subsidize and those in which it will abandon trying to raise external funds to finance a project).

<sup>16</sup> See PAUL MILGROM & JOHN ROBERTS, *ECONOMICS, ORGANIZATION AND MANAGEMENT* 166–67 (1992).

much time and effort the entrepreneur is dedicating to the venture.<sup>17</sup> This in turn will make it easier for entrepreneurs to engage in self-dealing and other types of opportunistic behavior. As a general matter, the moral hazard problem will be more severe in technology intensive firms, given that even if investors are able to observe an entrepreneur, they may not have the requisite technical knowledge to determine whether her actions are in the best interests of the firm.<sup>18</sup>

### 3. *The General Contracting Problem Faced by Venture Capitalists*

One role of financial intermediaries, such as venture capitalists, is to act as agents for investors who do not have the requisite expertise to screen investments and manage the moral hazard problem.<sup>19</sup> We will be primarily concerned with the way that venture-capital contracts deal with the moral hazard posed by entrepreneurs. Given the informational asymmetry problem described above, the venture capitalist will be unable to fully discern whether the start-up's performance is due to the actions of the entrepreneur or factors beyond her control. It is reasonable to assume that the entrepreneur is risk-averse and thus prefers a certain return to a random one, which is equivalent to saying that she will discount any portion of her compensation that depends on random shocks due to factors beyond her control. As a result, a venture capitalist faces the following problem: designing a contract that provides the entrepreneur with a sufficiently high expected return so that it exceeds (or is at least as good as) that of her other employment options, while at the same time giving her the incentive to exert the proper amount of effort.<sup>20</sup>

One way of dealing with the entrepreneur's risk-averseness is to pay her a fixed amount, regardless of the outcome; however, given the general inability of observing the entrepreneur's effort, such a compensation scheme will undercut her incentive to do anything. On the other hand, making the entrepreneur's compensation completely dependent on the observed output will provide maximum incentive, but at a price—the

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<sup>17</sup> See GOMPERS & LERNER, *supra* note 7, at 130–31 (discussing the moral hazard problem in venture-capital-financed firms); CUMMING & JOHAN, *supra* note 1 (discussing moral hazard and adverse selection problems in venture-capital financing); Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976) (discussing monitoring costs in principal-agent relationships).

<sup>18</sup> See *Venture Capital*, *supra* note 5 (discussing value provided by venture capitalists, given large informational uncertainty in high-tech start-ups).

<sup>19</sup> See Sudipto Bhattacharya et al., *Monitoring by and of Banks: A Discussion*, in CREDIT, INTERMEDIATION, AND THE MACROECONOMY: MODELS AND PERSPECTIVES 122, 122 (Sudipto Bhattacharya et al. eds., 2004) (stating that financial intermediaries are able to avoid duplicative screening).

<sup>20</sup> See MILGROM & ROBERTS, *supra* note 16, at 214–15 (describing the general problem of designing an incentive contract when a principal cannot fully observe the agent's level of effort).

entrepreneur will discount the uncertain compensation and thus require a greater amount in return for bearing all of the risk associated with outside shocks. The venture capitalist will thus have to trade off the added benefit from eliciting a greater amount of effort against the added compensation it will have to pay to get the entrepreneur to agree to bear a greater amount of risk. This risk-sharing problem is particularly important in start-ups, given the general uncertainty surrounding innovations; in other words, the expected returns produced by start-ups have a high variance, and thus the risks borne by the parties will be greater. As we will now see, venture-capital contracts make use of incentives that are very high-powered, in the sense that they shift a large portion of the firm's risk to the entrepreneur.

### B. *How Venture-Capital Contracts Deal with Transactional Hazards*

In order to reduce the risks associated with investing in information-intensive start-ups, standard venture-capital contracts give ultimate control of the firm to the venture capitalists, allow them to make their investments in stages; and include a number of other high-powered incentives<sup>21</sup> meant to keep entrepreneurs on a tight contractual leash.<sup>22</sup>

#### 1. *Retaining Formal Control of the Venture*

Under corporate law, corporations are managed by or under the direction of a board of directors. Although the board does not usually run the day-to-day affairs of a company, it is vested with the power and responsibility of making important management decisions, including hiring and firing managers and setting their compensation. Not surprisingly, as a general matter, venture capitalists will negotiate to retain effective control of the board.<sup>23</sup> This allows them to reduce the costs of monitoring and

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<sup>21</sup> See Sahlman, *supra* note 4, at 506 (arguing that venture capitalists structure their investments to keep control over the venture, use compensation schemes that provide "appropriate incentives" to entrepreneurs, and adopt exit mechanisms to increase the liquidity of their investments).

<sup>22</sup> See, e.g., Paul A. Gompers, *Optimal Investment, Monitoring, and the Staging of Venture Capital*, 50 J. FIN. 1461, 1462 (1995) [hereinafter *Optimal Investment*] (arguing that staged financing is a way of keeping a "tight leash" on entrepreneurs).

<sup>23</sup> Even when venture capitalists do not have direct control over the board of directors, they often retain *de facto* control over both the board and the venture. See, e.g., Joseph Rosenstein et al., *Do Venture Capitalists on Board Portfolio Companies Add Value Besides Money?*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 216, 220 (Robert H. Brockhaus, Jr. et al. eds. 1989). See Thomas Hellmann, *The Allocation of Control Rights in Venture Capital Contracts*, 29 RAND J. ECON. 57, 58 (1998) ("[V]enture capitalists hold effective control over the board, typically through a voting majority, and sometimes through explicit contractual agreements."). When firms are already far along in the development and marketing process at the time of investment, a venture capitalist may retain contingent control over the board, triggered upon the occurrence of certain events, such as the firm's failure to achieve a certain profit level, or the violation of affirmative or negative covenants in the preferred stock agreement. See Josh

disciplining the entrepreneur. It gives them access to corporate information on a real-time basis, the ability to fire the entrepreneur, and the power to intervene in micro-level management whenever they believe that the firm is being mismanaged. Venture capitalists also retain the power to liquidate the firm or sell it through a private sale or an initial public offering. Finally, venture-capital contracts contain a number of provisions aimed at restricting the managerial power of entrepreneurs, including prohibiting them from amending the certificate of incorporation, changing the nature of the business, entering into self-dealing transactions, making unauthorized dividend payments, or agreeing to a merger or the sale of all or substantially all of the firm's assets.

## 2. *Staged Financing*

Venture capitalists invest in stages,<sup>24</sup> which means that each time the entrepreneur runs out of funds, she has to convince the venture capitalist to finance an additional stage. At each juncture, the venture capitalists will have the option to provide more capital, bring in new investors or liquidate the company. In other words, staged financing provides venture capitalists with a series of real options. By letting the future unfold before making a costly-to-reverse investment, venture capitalists reduce their overall exposure; time gives them the ability to observe the entrepreneur in action and any progress made in finishing and marketing the innovation. But staged financing also provides venture capitalists with great bargaining power over the entrepreneur,<sup>25</sup> and thus the ability to act opportunistically.

For example, venture capitalists can increase their bargaining leverage by waiting until the firm has exhausted its working capital before agreeing to a new round of financing. Additionally, since venture capitalists make their investments using convertible preferred stock, the price agreed to by the parties at each stage will affect the entrepreneur's equity stake. This is because the preferred stock will have anti-dilution provisions that adjust the conversion price whenever new equity is issued at a lower price. A common type of anti-dilution provision adjusts the conversion price of *all*

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Lerner, *Venture Capitalists and the Oversight of Private Firms*, 50 J. FIN. 301, 308–10 (1995); Joseph Rosenstein et al., *The CEO, Venture Capitalist, and the Board*, 8 J. BUS. VENTURING 99, 111 (“[T]he boards of high-technology portfolio firms are small and are dominated, in terms of numbers, by venture capital representatives . . . . On boards where lead investors come from the top-20 venture capital firms, outright numerical control is characteristic.”).

<sup>24</sup> See *Optimal Investment*, *supra* note 22, at 1462 (“[T]he role of staged financing infusion is analogous to that of debt in highly leveraged transactions, keeping the owner/manager on a ‘tight leash’ and reducing potential losses from bad decisions.”).

<sup>25</sup> See, e.g., Sahlman, *supra* note 4, at 506 (“[T]he most important mechanism for controlling the venture is staging the infusion of capital.”).

of the venture capitalists' preferred stock, even if just *one* share is sold at a lower price.

### 3. *Compensation Schemes as High-Powered Incentives*

Entrepreneurs receive the bulk of their compensation from stock options and the appreciation of their original equity holdings. Venture capitalists use stock options that vest over relatively long periods, heavily weighted towards the back end.<sup>26</sup> An entrepreneur who leaves the company or is fired before her options vest loses her right to exercise them. Using stock options with these characteristics increases the intensity of the compensation package, since the entrepreneur will have to produce a series of good returns before she can cash in on her efforts.

Even if the entrepreneur is able to exercise the options, she will have no ready market to sell the shares until the venture capitalist decides to harvest the investment, either through a private sale or an initial public offering. As a general matter, it is difficult for non-controlling shareholders of closed corporations to sell their shares to third parties, given that the sale will give rise to the same type of adverse selection problem discussed above. Additionally, under standard contracts, an entrepreneur agrees not to sell her shares without prior consent. If she leaves the company or is fired, an entrepreneur agrees to sell her shares to the venture capitalist at book value rather than current market value.

There are two additional reasons why the threat of getting fired increases the intensity of the incentive provided by venture-capital contracts. First, at the time of the investment, the entrepreneur will transfer the right to any innovation, including any intellectual property, to the firm, as well as the rights in any subsequent innovations. If she is fired, she will lose access to them. Second, an entrepreneur will also enter into non-disclosure and non-compete agreements that will restrict her ability to seek alternative employment.

### III. SELF-PRESERVING STRATEGIC BEHAVIOR AND OTHER UNINTENDED SIDE EFFECTS OF HIGH-POWERED INCENTIVES

The high-powered incentives and control mechanisms found in venture-capital contracts will provide entrepreneurs with important information about the transactional risks that they face. However, some of the relevant facts about these risks are likely to remain hidden behind

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<sup>26</sup> See GOMPERS & LERNER, *supra* note 7, at 131-33 (describing the use of stock options to align the interests of venture capitalists and entrepreneurs).



legalese.<sup>27</sup> Even entrepreneurs who carefully read the contracts will likely come away with mixed signals about the true nature of the bargain.<sup>28</sup> At the same time, one would expect that during the venture they will become increasingly aware of transactional risks, particularly as high-powered incentives become binding and venture capitalists exert their power, either legitimately or opportunistically. One would also expect that as they learn about these risks, entrepreneurs will try to reduce them by resorting to “self-preserving strategic behavior.” The venture-capital literature has not given sustained attention to the inefficiencies created by the self-preserving strategic behavior of entrepreneurs.

This Part begins by providing an overview of the various sources of potential venture capitalist opportunism. It then argues that certain characteristics of innovation-intensive start-ups allow entrepreneurs to engage in self-preserving strategic behavior. After doing so, the Part examines various types of self-preserving strategic behavior available to entrepreneurs and the social welfare repercussions.

#### A. *Venture Capital Opportunism*

Standard venture capital contracts give venture capitalists great leeway to act opportunistically.<sup>29</sup> Entrepreneurs open themselves to potential opportunism by agreeing to transfer their intellectual property rights, invest further in innovation-specific and venture-specific human capital, and make the bulk of their compensation contingent on the venture’s success. Once an entrepreneur has made these transaction-specific investments, the venture capitalists can threaten to fire her unless she agrees to give them a greater share of the firm’s profits. What makes this threat credible is the fact that

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<sup>27</sup> See Stewart Macaulay, *Relational Contracts Floating on a Sea of Custom? Thoughts About the Ideas of Ian Macneil And Lisa Bernstein*, 94 NW. U. L. REV. 775, 797 (2000) (arguing that “many lawyer-drafted, standard forms can only be decoded by [ ]lawyer[s]”).

<sup>28</sup> This is due in part to the fact that venture capital contracts are very complex, cover relatively long periods, and entrepreneurs have little experience with them. The same type of problem arises with other long-term contracts, such as those between franchisors and franchisees. See Gillian K. Hadfield, *Problematic Relations: Franchising and the Law of Incomplete Contracts*, 47 STAN. L. REV. 927 (1990) (discussing the relational nature of long term franchise contracts and the various repercussions of their incompleteness). On the various contracting problems common in long-term contracts, see Victor P. Goldberg, *Price Adjustment in Long-Term Contracts*, 1985 WIS. L. REV. 527 (1985); Stewart Macaulay, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55 (1963); Ian R. Macneil, *Contracts: Adjustment of Long-Term Economic Relations Under the Classical, Neoclassical, and Relational Contract Law*, 72 NW. U. L. REV. 854 (1978).

<sup>29</sup> The argument here is not that venture capitalists always act opportunistically, only that there are various aspects of the control-incentive mechanisms in venture-capital contracts that allow a venture capitalist to act opportunistically, if they are so inclined.

venture capitalists often replace entrepreneurs with professional managers.<sup>30</sup> Entrepreneurs who are good at innovating do not necessarily have the "skill set" needed to effectively manage a fast growing company in a volatile environment.<sup>31</sup> Not surprisingly, venture capitalists see great value in being able to easily fire underperforming entrepreneurs.<sup>32</sup>

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<sup>30</sup> In one study, Gorman and Sahlman asked venture capitalists how often they fired senior management:

The answer is "Frequently." The mean (in the statistical sense) venture capitalist has initiated the firing of three CEO/President per 2.4 years of venture investing experience. Given that a venture capitalist typically monitors only nine companies at a time, and expects to hold each investment five to seven years, this represents a noticeable high incidence of what is for all parties a traumatic experience. It seems that clear that one of the most significant, not to mention dramatic, things that venture capitalists do is to evaluate management and, when they feel it to be necessary, to dismiss a company's leadership.

Michael Gorman & William A. Sahlman, *What Do Venture Capitalists Do?*, 4 J. BUS. VENTURING 231, 241 (1989). See also Jerome Doutriaux, *Evolution of the Characteristics of (High-tech) Entrepreneurial Firms*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 368 (John A. Hornaday et al. eds. 1984) (study of Canadian high-technology firms three to eight years old, finding that about fifty percent of them had lost at least one founder); Arnold Cooper & Albert V. Bruno, *Success Among High Technology Firms*, 20 BUS. HORIZ. 16, 17-18 (1977) (study of 250 high-technology firms with multiple founders, finding that forty-eight percent of the firms four or more years old had experienced the departure of at least one founder); Donald C. Hambrick & Lynn M. Crozier, *Stumblers and Stars in the Management of Rapid Growth*, 1 J. BUS. VENTURING 31, 44 (1985) (finding that successful start-up firms replaced (or complemented) the owner/founder with professional managers, and also finding that when high-growth firms "stumbled," founder CEOs were more likely to be heading them); Michael T. Hannan et al., *Inertia and Change in the Early Years: Employment Relations in Young, High Technology Firms*, 5 J. INDUST. & CORP. CHANGE 503, 526-27 (1995) (study finding that the likelihood that the founder entrepreneur will be replaced as CEO is approximately ten percent within the first twenty months, forty percent after 3.33 years and over eighty percent after 6.5 years); Bob Zider, *How Venture Capital Works*, reprinted in HARV. BUS. REV. 131, 139 (Nov.-Dec. 1998) ("[I]t is unlikely that the founder will be the same person who takes the company public.").

<sup>31</sup> As a general matter, venture capitalists assume that entrepreneurs will be unable to become effective managers. They refer to this presumed shortcoming of entrepreneurs as the "founder's disease." See, e.g., MARYAM TASHAKORI, MANAGEMENT SUCCESSION: FROM THE OWNER-FOUNDER TO THE PROFESSIONAL PRESIDENT 25 (1980); Gorman & Sahlman, *supra* note 30, at 238, 242 (finding that "venture capitalists almost uniformly attribute failures [of portfolio companies] to shortcomings in senior management" and founders generally); Gary E. Willard et al., *In Order to Grow, Must the Founder Go: A Comparison of Performance Between Founder and Non-Founder Managed High-Growth Manufacturing Firms*, 7 J. BUS. VENTURING 181, 182 (1992).

<sup>32</sup> See Hellmann, *supra* note 23, at 59 (arguing that entrepreneurs agree to grant control to the venture capitalist in order to give it the ability to replace them with professional managers who would increase the overall value of the firm).

At the same time, one can make a strong argument that entrepreneurs often enter transactions believing incorrectly that their tenure is relatively secure. The fact that entrepreneurs agree to receive most of their compensation through stock options provide some evidence that they expect to remain employed at least until those options vest (if they get fired before then, the options are cancelled).<sup>33</sup> As the probability of being fired increases, so does the likelihood that an entrepreneur will engage in self-preserving strategic behavior aimed at making it costlier for the venture capitalist to replace her.<sup>34</sup>

A second source of venture-capitalist opportunism is staged financing.<sup>35</sup> High-tech start-ups need a steady source of capital in order to finish, test, and bring the innovation to market. As a result, after an entrepreneur has made transaction-specific investments, a venture capitalist can act opportunistically by threatening not to fund any more stages or waiting to commit to a new round until the venture's working capital is exhausted (the "burn date"). The bargaining power provided by staged financing is further enhanced by two other factors. First, venture capital contracts generally give the venture capitalist a monopoly over future financing and veto power over who else can provide funds.<sup>36</sup> Second, the pricing of new capital infusions will determine whether the anti-dilution provisions in the venture capitalist's preferred stock are triggered. If the price is sufficiently low, the anti-dilution provisions can effectively wipe out an entrepreneur's whole equity stake.<sup>37</sup> As one commentator put it, when describing ratchet down anti-dilution provisions:

There is no other provision so capable of changing the initial bargain between the parties with the dramatic effect of Full Ratchet dilution. When venture capitalists are referred to as "vulture capitalists," it is likely the wounded

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<sup>33</sup> See GOMPERS & LERNER, *supra* note 7, at 131–33.

<sup>34</sup> Firms are of course worried about potential litigation arising from dismissals. See, e.g., Adam P. Forman, *VCS Face New Risks When Discharging CEO/Minority Shareholders* (Fall 1992), [http://www.tht.com/\\_vti\\_bin/shtml.dll/234800.htm/map](http://www.tht.com/_vti_bin/shtml.dll/234800.htm/map); Robert W. Payne, *Practical Advice on Selected Legal Issues for the Hi-Tech Employer: Investigation and Termination of Employees, Ownership of Inventions, Commissions and Trade Secret Protection*, <http://www.lgpatlaw.com/docs/pracadvc.html>.

<sup>35</sup> See Sahlman, *supra* note 4.

<sup>36</sup> Venture capitalists sometimes prevent or try to dissuade entrepreneurs from getting outside financing even if they are not willing to fully fund the venture themselves. See Albert A. Bruno et al., *Patterns of Failure Among Silicon Valley High Technology Firms*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 677, 689 (Paul D. Reynolds et al. eds. 1996).

<sup>37</sup> See Daniel P. Finkelman & Scott A. Birnbaum, *The Risks of "Wash Out" Financings: Avoiding Litigation Claims by Diluted Founders* (Spring 1997), [http://www.tht.com/\\_vti\\_bin/shtml.dll/234800.htm/map](http://www.tht.com/_vti_bin/shtml.dll/234800.htm/map).

founders are talking about dilutive financing and a Full Ratchet provision.<sup>38</sup>

A third source of venture capitalist opportunism is their control over the manner and timing of their exit from the firm. Venture capitalists retain the right to decide when to liquidate the venture or sell it through a private sale or initial public offering, a contractual right meant to alleviate the risks of investing in a firm with no active market for its stock.<sup>39</sup> Entrepreneurs rarely welcome a liquidation of the venture, even if it is not performing well, since they lose their employment and the possibility of seeing their innovation reach the market. At the same time, venture capitalists will sometimes liquidate an otherwise viable firm, if its expected returns are not what they (or their investors) expected,<sup>40</sup> or not worth pursuing further, given limited resources and the need to manage other portfolio firms.<sup>41</sup> More generally, venture capitalists are wary of being stuck with the "living dead," firms that are profitable, but not enough to allow them to be sold on a timely basis in a private sale or public offering.<sup>42</sup>

Entrepreneurs will generally prefer an IPO to a sale to a third party. Private sales are more likely to lead to changes in the entrepreneur's

<sup>38</sup> See JOSEPH W. BARTLETT, *VENTURE CAPITAL: LAW, BUSINESS STRATEGIES, AND INVESTMENT PLANNING* 176 (1988).

<sup>39</sup> See *Optimal Investment*, *supra* note 22, at 1463-64 (describing a study by Venture Economics of returns to venture capitalists in 1988 which found that venture capitalists who exited through IPOs received an average 59.9% per year, that is, 7.1 times the invested capital returned over 4.2 years; venture capitalists exiting by selling the company to a third party received average returns of only 15.4% per year (1.7 times their invested capital returned over 3.7 years); venture capitalists who exited by liquidating the portfolio company lost eighty percent of their value over a period of 4.1 years).

<sup>40</sup> See, e.g., Jim Bartimo, *Stoking the Micro Fire*, *INFOWORLD* 47, 48 (Dec. 3, 1984) (attributing rush to carry out initial public offerings to the pressure of venture capitalists who wanted to liquidate their investments in computer industry ventures).

<sup>41</sup> See Sahlman, *supra* note 4, at 507 (arguing that the "credible threat to abandon a venture, even when the firm might be economically viable, is the key to the relationship between the entrepreneur and the venture capitalist" and stating that while shutting down otherwise viable firms may appear to be economically irrational, it makes perfect economic sense when viewed from the venture capitalist's perspective which must allocate its time and resources among various ventures—"Although the individual firm may be economically viable, the return on time and capital to the individual venture capitalist is less than the opportunity cost, which is why the venture is terminated."). See also John C. Ruhnka & John E. Young, *A Venture Capital Model of the Development Process for New Ventures*, 2 *J. BUS. VENTURING* 167, 176 (1987) (describing the common strategy of "parlaying of funding," the practice of venture capitalists of allocating later round funding to only those ventures which are identified as "winners" after the early stages of financing, thus allowing venture capitalists to "average-up" the total funds of the venture capital fund invested in successful firms).

<sup>42</sup> See Ruhnka et al., *The "Living Dead" Phenomenon in Venture Capital Investments*, 7 *J. BUS. VENTURING* 137, 137 (1992) (empirical study finding that approximately 20.6% of sample would end up as "living dead").

responsibilities within the firm, such as being demoted or even being fired.<sup>43</sup> Moreover, venture capitalists and entrepreneurs often have different preferences as to timing of an IPO. There is some evidence that venture capitalists sometimes carry out IPOs prematurely—when waiting longer would have led to a higher offering price or probability that the firm would survive. Premature offerings can thus harm entrepreneurs. There is also evidence that entrepreneurs are more likely to be fired the faster a firm is forced to reach maturity, so that the venture capitalist can harvest its investment.<sup>44</sup> Nonetheless, a venture capitalist may rush an IPO in order to satisfy current investors or attract new ones when it decides to raise additional capital, a phenomenon known as “grandstanding.”<sup>45</sup>

### B. *Ex Post Bargaining Power of Entrepreneurs*

As is usually the case with contracts among participants in business firms, venture-capital contracts are incomplete.<sup>46</sup> This incompleteness exacerbates the opportunism problem discussed in the previous section, since it allows venture capitalists to use their control over the board of directors to exploit contractual gaps.<sup>47</sup> However, incomplete contracts leave

<sup>43</sup> See Lisa Vincenti, *Venture-Backed M&A Surge Expected*, VENTURE CAPITAL J. (Oct. 1994) (discussing the use of mergers and acquisitions as a form of exit mechanism for venture capitalists and the potential threat they pose founders—“Maintaining control—not to mention their jobs—is also critical to many executives, who often see these threatened by mergers.”).

<sup>44</sup> See Thomas J. Dean and G. Dale Meyer, *Venture Development in High-Technology Firms: The Impact of Managerial Qualities Across the Organizational Life Cycle*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 93, 101–02 (Robert H. Brockhaus, Jr. et al. eds. 1989); George C. Rubenson & Anil K. Gupta, *The Founder's Disease: A Critical Re-examination Evaluation*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 167, 177–78 (Neil C. Churchill et al. eds. 1990) (empirical study finding that if a venture grows slowly and the founder is “capable of some adaptation,” then a venture can become “quite large before the initial succession is necessary”).

<sup>45</sup> See Paul A. Gompers, *Grandstanding in the Venture Capital Industry*, 42 J. FIN. ECON. 133 (1996).

<sup>46</sup> This incompleteness is a function of: (1) the bounded rationality of parties (their inability to foresee all future contingencies or to fully process the information at their disposal) (2) bargaining costs associated with negotiating and reaching an agreement regarding the governance contracts and (3) costs associated with the ability to write contracts that courts will be able to fully enforce. See HART, *supra* note 9, at 23. For a slightly different list of transaction cost related constraints to complete contracting, see OLIVER WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING* 30 (1985) (emphasizing also the role of opportunistic behavior by contracting parties and the bilateral monopolies that emerge once parties make relationship-specific investments). See also Luca Anderlini & Leonardo Felli, *Incomplete Written Contracts: Undescribable States of Nature*, 109 Q. J. OF ECON. 1085, 1086 (1994) (describing the computational intractability problems when trying to write complete contracts).

<sup>47</sup> See generally Luigi Zingales, *Corporate Governance*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 497, 498–99 (Peter Newman ed., 1998)

open the possibility that *both* parties will engage in costly ex post bargaining and strategic behavior.<sup>48</sup> A venture capitalist will undoubtedly have greater ex post bargaining power due to its formal control over the venture.<sup>49</sup> But legal control over innovation-intensive start-ups does not provide as much bargaining power as it does in traditional manufacturing firms.<sup>50</sup> This is because the principal assets of innovation-intensive firms are intangible in nature—human capital, information, and intellectual property.<sup>51</sup>

Of critical importance will be the entrepreneur's ability to *manage* the production and disclosure of information about the innovation and the

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(arguing that in a world of complete corporate contracts, there would be no need for the ex post governance provided by the board of directors and other corporate governance mechanisms, since all potential future conflicts would be anticipated and resolved ex ante).

<sup>48</sup> One way to view the renegotiation of firm contracts is as the exception, what happens when there is some kind of organizational failure or crisis, or when an unforeseen contingency occurs. We can subsume renegotiation of firm contracts into a broader category of allocational decision, in which there is an allocation or distribution of surpluses/losses or burdens/rights. I have argued elsewhere that even in large public corporations one can profitably characterize the relationship between shareholders and managers as an ongoing set of renegotiations, an ongoing bargaining game. See Manuel A. Utset, *Towards A Bargaining Theory of the Firm*, 80 CORNELL L. REV. 540, 548 (1995).

<sup>49</sup> For an account of venture capitalist-entrepreneur relations that places principal emphasis on the control mechanisms used by venture capitalists, see Darwin V. Neher, *Staged Financing: An Agency Perspective*, 66 REV. ECON. STUD. 255 (1999); Erik Berglof, *A Control Theory of Venture Capital Finance*, 10 J.L. ECON. & ORG. 247, 251 (1994); *Optimal Investment*, *supra* note 22, at 1462 (focusing on the use of staged financing as a control mechanism); Hellmann, *supra* note 23, at 57; Lerner, *supra* note 23, at 302 (focusing on fact that venture capitalists increase their control over the board of directors after a change in CEO); Ruhnka & Young, *supra* note 41, at 167; Sahlman, *supra* note 4, at 506.

<sup>50</sup> Generally, ownership of a firm's physical assets is a principal source of ex post bargaining power, since it gives the owner the right to exclude others from using them to engage in production. See Oliver Hart & John Moore, *Property Rights and the Nature of the Firm*, 98 J. POL. ECON. 1119, 1120 (1990). As Oliver Hart states, "the owner of an asset has *residual control rights* over the asset: the right to decide all usages of the asset in any way not inconsistent with a prior contract, custom or law." HART, *supra* note 9, at 30 (emphasis in original).

<sup>51</sup> Venture capitalists, often layer a variety of control mechanisms so that for any particular set of decisions, they have at their disposal an assortment of control mechanisms to give them leverage over an entrepreneur. See *generally* Hellmann, *supra* note 23, at 60–61. Rajan and Zingales have offered a more general theory of power in innovation-intensive firms such as venture capital financed firms, whose principal assets are human capital and other forms of intangible assets, what they have labeled "human capital organizations." See, e.g., Raghuram G. Rajan & Luigi Zingales, *Power in the Theory of the Firm*, 113 Q. J. ECON. 387, 387–88 (1998). Their theory acknowledges that access to physical assets creates power within firms but emphasizes a second source of power: access to intangible firm resources—e.g., access to ideas, to customers, to firm members with information or knowledge useful to others within the firm. See Raghuram G. Rajan & Luigi Zingales, *The Governance of the New Enterprise* 23–25 (Nat'l Bur. Econ. Res., Working Paper 7958, 2000).

firm's overall performance.<sup>52</sup> The entrepreneur can keep knowledge and information secret and time and frame disclosures to reduce the likelihood of being fired and make it more likely that the venture capitalist will finance additional stages.<sup>53</sup> More generally, an entrepreneur's ability to engage in self-preserving strategic behavior is due to the fact that venture capital-financed firms are information and knowledge-intensive and that it is the entrepreneur who controls these important intangible assets.

As a result, one would expect that an entrepreneur's bargaining power will be highest during the earlier phases of the venture, before she has transferred large amounts of innovation-specific information and knowledge to the venture capitalist and others within the firm. While the entrepreneur still controls this information and knowledge it can make credible threats to exit the firm and take it with her. Her ability to exit will be further enhanced by the fact that during this period it will be more difficult for a court to enforce non-compete and non-disclosure agreements, given the paucity of observable and verifiable information about the existence and ownership of intangible assets. As information and knowledge gets transferred and the firm acquires more tangible assets, the entrepreneur's bargaining power will decrease.<sup>54</sup> Of course, even during the earlier phases, an entrepreneur will have to make certain disclosures in order to convince a venture capitalist to fund additional stages.<sup>55</sup>

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<sup>52</sup> See, e.g., Hans Landström et al., *Contracts Between Entrepreneurs and Investors: Terms and Negotiation Processes*, in FRONTIERS ENTREPRENEURSHIP RESEARCH, 4 (1998) (citing evidence that entrepreneurs may manipulate information for strategic advantage that tensions and conflicts often arise in the relationship between the entrepreneur and venture capitalist).

<sup>53</sup> Leaving aside for a moment, securities laws and other disclosure requirements, those in control of information can generally determine what information is produced and the pace in which information is disclosed. For example before actual earnings are released managers in companies who expect actual earnings to differ from those expected by market participants will issue earnings guidance and warnings, among other things, to try to change shareholder expectations gradually.

<sup>54</sup> As tangible assets increase, so does the venture capitalist's bargaining power. For one thing, its legal ownership of the tangible assets allows it to control access to them. Moreover, tangible assets can be sold, allowing a venture capitalist to more credibly threaten to fire the entrepreneur or liquidate the venture and still recuperate all or part of its investment. There is some empirical evidence showing that as the assets of venture capital-financed firms become more tangible, the level of monitoring by venture capitalists decreases. See *Optimal Investment*, *supra* note 22, at 1462. As the venture reaches the manufacturing stage, it will acquire equipment that can be used as collateral to borrow funds. Moreover as the venture reaches the marketing stage and starts selling products, it can sell accounts or chattel paper to raise working capital. On the sale of accounts and chattel paper, see generally U.C.C. § 9-102(b) (1998).

<sup>55</sup> But see M. Audrey Korsgaard & Harry J. Sapienza, *Performance Feedback, Decision Making Processes and Venture Capitalist Support for New Ventures*, in FRONTIERS ENTREPRENEURSHIP RESEARCH 452 (1995) (empirical study finding that although the timely transfer of information from the entrepreneur to the venture capitalist had a positive effect on the venture capitalist's trust of the entrepreneur,

Nonetheless, knowledge, as opposed to information, will take longer to transfer, since some of the innovation-specific knowledge will be "tacit knowledge", which is best learned through experience—by "doing"—not by listening or reading.<sup>56</sup>

### C. *Choosing Between Finishing the Innovation and Acquiring Managerial Skills*

One can assume that during the early part of the venture an entrepreneur will focus on the innovation process, with the goal of improving and finishing the innovation and dealing with unforeseen contingencies. As the venture progresses, the entrepreneur will need to spend more time learning how to become an effective manager.<sup>57</sup> Her managerial skills will become increasingly important as the product reaches the marketing stage, more employees are hired, and the venture capitalist begins to think about harvesting its investment. During these later periods, the ability of a venture to survive and grow will depend on the skills of its managers. If the entrepreneur has not acquired the requisite skills, the venture capitalist will be forced to replace her with a professional manager. As we will now see the high-powered incentive schemes in venture-capital contracts can lead an entrepreneur to make sub-optimal decisions about how much time to invest becoming a good manager, as opposed to finishing the innovation.

The standard principal-agent model is concerned with designing contracts that provide the right incentives to risk-averse agents and

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surprisingly it did not affect the decision by the venture capitalist whether to commit more funds to the venture).

<sup>56</sup> Tacit knowledge can be defined as "the knowledge and techniques, methods and designs that work in certain ways and with certain consequences, even when we cannot explain exactly why." Jaqueline Senker, *Tacit Knowledge and Models of Innovation*, 4 J. INDUSTR. & CORP. CHANGE 425, 426 (1995); Ashish Arora, *Licensing Tacit Knowledge: Intellectual Property Rights and the Market for Know-How*, 4 ECON. INNOV. NEW TECH. 41-42 (1995).

<sup>57</sup> Most venture capitalists will prefer to avoid the disruptions to a venture that are produced when a founder/CEO is fired at too early a stage in the venture's development. These disruptions, in fact, can undermine the firm just when it is reaching the marketing phase. See ROBERT J. KUNZE, NOTHING VENTURED: THE PERILS AND PAYOFFS OF THE GREAT AMERICAN VENTURE CAPITAL GAME 213-14 (1990) (arguing that replacing the CEO of a young company can be highly destabilizing to the company, given that:

[T]he time spent hiring the new chief executive officer, the shock to the organization when the changeover takes place, the lack of direction in the interim . . . all impact heavily on the health and potential of the company. In the best of circumstances replacing a chief executive officer is a wrenching experience and companies can easily fail at this juncture.).



optimally allocate risks between principals and agents.<sup>58</sup> It does so through compensation schemes that tie an agent's compensation to observable performance measures, such as the firm's output.<sup>59</sup> The highly complex compensation schemes in the agency literature are rarely found in actual contracts. One reason is that real-world agents usually perform multiple tasks. As Holmstrom and Milgrom have observed, incentive schemes serve not only to determine an agent's effort, but also how she allocates that effort between different tasks.<sup>60</sup>

Incentive schemes should therefore be designed with the aim of ensuring not only that the agent exerts high effort, but that she accomplishes the task or tasks that will maximize the principal's returns. For example, if a lawmaker wants to create an incentive scheme for teachers, it would have to tie their compensation to an observable outcome that is a good proxy for how hard they are working—e.g., scores from standardized tests. However, there are other skills valuable to students, such as creativity, that are not easy to observe or quantify. One would expect that teachers whose compensation is tied to test scores will spend more time teaching the subjects that can be tested and less time teaching creativity and other important but difficult to measure skills.<sup>61</sup>

The high-powered incentive schemes in venture-capital contracts are not well calibrated to deal with this dual-task principal-agent problem. As a venture progresses, an entrepreneur must decide how much additional

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<sup>58</sup> It turns out that it is not generally possible to provide agents with the incentive to exert the right level of effort while still allocating risks optimally between risk averse agents and risk neutral principals. See generally Oliver Hart & Bengt Holmström, *The Theory of Contracts*, in *ADVANCES IN ECONOMIC THEORY* 71 (T.F. Bewley ed., 1987).

<sup>59</sup> Traditional principal-agent models attempt to formulate optimal incentives for motivating a risk-averse agent to maximize her level of effort. This requires adopting a compensation scheme to adequately compensate an entrepreneur for the risk she is undertaking. The entrepreneur will have a reservation value, or participation value, that would be the minimum level of compensation she would agree to given her outside options and the risks she will undertake. So the contract, in essence, will end up dividing how much risk is kept by the principal, in our case, a well-diversified, risk neutral venture capitalist, and how much risk will be allocated to the risk-averse entrepreneur. Any time risk can be transferred from a risk-averse to a risk-neutral individual without making the risk-neutral individual worse off, the transfer will be Pareto-improving. The idea behind incentive contracts is to trade off risk against compensation: the greater the risk imposed on the entrepreneur the greater should be the compensation. If the entrepreneur is asked to bear too much of the risk, then we she is suffering a disutility which can be reduced by transferring risk away from her and to the risk-neutral venture capitalist.

<sup>60</sup> See Bengt Holmström & Paul Milgrom, *Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design*, 7 *J.L. ECON. & ORG.* 24 (1991) [hereinafter *Multitask Principal*]; Bengt Holmström & Paul Milgrom, *Aggregation and Linearity in the Provision of Intertemporal Incentives*, 55 *ECONOMETRICA* 303 (1987).

<sup>61</sup> See *Multitask Principal*, *supra* note 60, at 25.

human capital to acquire, and of what type: general human capital, transferable to other ventures, or firm-specific human capital, whose value is partially or completely lost if she leaves the firm.<sup>62</sup> As we have seen, the innovation and any intellectual property associated with it are the property of the firm. As a result, an entrepreneur will choose to invest in innovation-specific human capital only to the extent that she expects to continue to be employed by the start-up. At the same time, in order to increase the likelihood that she will not be replaced by a professional manager, an entrepreneur has to learn how to be an effective manager.<sup>63</sup> This management-specific human capital has two important characteristics. First, even if the entrepreneur is fired, she will be able to use those managerial skills in other ventures—i.e. managerial knowledge is a form of general human capital. Second, management decisions are made in public (at least, in view of those within the venture) and memorialized in corporate minutes. While this makes the entrepreneur more accountable for her management decisions, it also allows her to reap the benefits of having her effort more easily measured and compensated. Finally, management decisions tend to produce results and thus rewards in the short-run.

On the other hand, the act of innovating (or working towards bettering an existing innovation) is generally harder to observe and measure. Ideas and innovations germinate in the mind of the entrepreneur over a period of time, which can last years. Some thoughts and sketches may see the light of day, but it is difficult to understand from looking at them just how hard the entrepreneur has been working at innovating. In short, innovation is a hidden (largely mysterious) exercise, which is hard to quantify until the process is well along. Moreover, it is also a task that produces results mainly in the long run, something that might worry entrepreneurs, given the short time horizon of venture capitalists and the possibility that the entrepreneur will be fired before she can fully share in the rewards of her innovation.<sup>64</sup>

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<sup>62</sup> See generally GARY S. BECKER, HUMAN CAPITAL 33–51 (3d ed. 1993).

<sup>63</sup> For the sake of simplicity, we will focus on two types of tasks available to entrepreneurs: (1) innovating and (2) managing. While there is room for disagreement as to the precise contours of the distinction between these two, I use the term "innovating" to refer principally to those activities aimed at creating a new product or improving an existing one, and "managing" to refer to those activities aimed at running the general affairs of the company as well as those associated with producing and marketing the product. Of course, there are myriad other activities that an entrepreneur may have to undertake, but focusing on these two important tasks will allow us to draw attention to certain weaknesses in the types of incentive mechanisms employed in practice.

<sup>64</sup> It should be noted that for purposes of the dual task model, it does not matter if the reverse is true—i.e. if innovating is more observable than managing. This is because what drives the result in the dual task model is the difference in the observability of the two tasks.

One would thus expect that all other things being equal, the high-powered incentives in venture-capital contracts would cause entrepreneurs to take an active role in managing the company sooner than would be efficient. In some cases, entrepreneurs may also have an incentive to slow down the innovation process so as to give them time to acquire management skills.<sup>65</sup> It is because of this type of distortion that some commentators have argued that low-powered incentives are usually better when providing incentive to participants in a firm.<sup>66</sup> Finally, the nature of the innovation process exacerbates the dual task problem by making it difficult to ascertain when an entrepreneur should shift from innovating to actively managing the firm. The innovation process is not a straight line progression from design to development, to production, to marketing: it is both serial and cyclical, involving “rapid feedback, mid-course corrections to design, and redesign.”<sup>67</sup> An entrepreneur must focus on innovating activities (particularly making improvements to the innovation) during all stages of the venture, even though as the venture gets closer to the marketing stage, she will also have to shift her attention to marketing issues.

#### D. *The Innovator’s Dilemma*

Before a venture capitalist makes its investment, the entrepreneur has control over the venture and innovation. She also has control over innovation-specific information, the intellectual property and her general human capital or know-how. As we have seen, a venture capitalist will

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<sup>65</sup> See Dean & Meyer, *supra* note 44 (empirical study showing that the slower a firm grows, the more likely that the founder will not be fired); Rubenson & Gupta, *supra* note 44.

<sup>66</sup> See WILLIAMSON, *supra* note 46. See also Pien Wang & Peng S. Chan, *Top Management Perception of Strategic Information Processing in a Turbulent Environment*, 16 LEADERSHIP & ORG. DEV. J. 33 (1995).

Top managers' enthusiasm in engaging in strategic information viewing, search, and interpretation activities is influenced by the manner in which they are rewarded . . . . It is expected that top managers, whose rewards are based mainly on length of service and/or short-term efficiency of performance, will either lack motivation in performing strategic information processing activities required in a turbulent environment or will attend to and search only for familiar and internal information. In contrast, top managers whose rewards are based primarily on their contribution to strategic positioning and/or product/market innovation, are likely to monitor broadly, proactively and frequently to identify opportunities and threats. They are inclined to pay more attention to novel environmental changes.

*Id.*

<sup>67</sup> Thomas M. Jorde & David J. Teece, *Innovation, Cooperation and Antitrust*, 4 HIGH TECH. L.J. 1, 14–15 (1989).

require the entrepreneur to relinquish ownership of the innovation and intellectual property and her control over the venture; it will also insist on having a monopoly right—or right of first refusal—over future financings. After an entrepreneur transfers these ownership rights, her value to the venture consists primarily in the innovation-specific and general human capital over which she retains control.

Not surprisingly, venture capitalists will also want the entrepreneur to transfer all relevant information about the innovation. However, because a large amount of this information resides in the entrepreneur's brain, it is difficult for the venture capitalist to verify the extent to which the information transferred is accurate and complete.<sup>68</sup> This section and the following one argue that the high-powered incentives in venture-capital contracts give entrepreneurs an incentive to delay transferring innovation-specific information. This delay can reduce the overall value of the venture and is another example of self-preserving strategic behavior by entrepreneurs.

Suppose that an entrepreneur has an innovation that is finished and ready to be marketed. In such a case, the value of the entrepreneur's general and innovation-specific human capital will be relatively low, as will the value of the professionalization services that a venture capitalist can provide. As a result, one would expect that these sorts of finished innovations would be sold independent of the entrepreneur's services.<sup>69</sup> In other words, unless the entrepreneur is also a highly skilled manager, society would be better off if a professional manager takes over for the entrepreneur. And unless the entrepreneur has other potential valuable innovations in the pipeline, her value to the venture will be relatively small.<sup>70</sup>

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<sup>68</sup> If it were possible to completely transfer all relevant information and knowledge at the time of a venture capitalist's initial investment, then one would expect that the entrepreneur would do so in return for appropriate compensation. On the varying degrees of complexity of governance structures required to deal with different types of innovation transactions, see generally Steven Globerman, *Markets, Hierarchies, and Innovation*, 14 J. ECON. ISSUES 977 (1980). For an incomplete-contracts approach to the same problem, see Phillippe Aghion & Jean Tirole, *The Management of Innovation*, 109 Q. J. ECON. 1185 (Nov. 1994).

<sup>69</sup> For an analogous discussion of the role of complementary and independent assets in justifying takeovers, where the goal is the optimal allocation of power between the two parties involved, see HART, *supra* note 9, at 8 (discussing how, if two firms with independent—i.e. not complementary—assets merge, it would not optimize the allocation of power, since the new owner of the combined firms would not gain any additional power and the prior owner, now an employee, would lose power and gain little in return).

<sup>70</sup> One would also expect that these sorts of ventures, if advanced enough, would be financed not by venture capitalists but through debt or by offering shares to the public.

However, in most cases, a venture capitalist invests in two highly intangible and complementary assets—a promising innovation, and an entrepreneur’s general and innovation-specific human capital, which includes the knowledge and ability required to finish the innovation and transform it into a marketable product. There are various reasons why venture capitalists usually invest in the complete package—the innovation and the entrepreneur. In cases where the innovation is still in an early phase of development, the entrepreneur’s skill and knowledge will be required to successfully conclude the innovation process. In other words, the innovation and the entrepreneur’s human capital are complementary. Entrepreneurs are valuable in a second way: as relatively inexpensive, highly motivated (albeit inexperienced) managers. Finally, the entrepreneur’s attachment to her idea and innovation may be such that buying the innovation alone would require the venture capitalist to pay a premium to get the entrepreneur to sell it.

Once the innovation has been transformed into a marketable product, the entrepreneur and the innovation are no longer complementary. From that point onward, the value of the new product is independent from the entrepreneur’s human capital, and the entrepreneur becomes expendable,<sup>71</sup> unless she has become a skilled manager or has other valuable innovations in the pipeline. Moreover, once the entrepreneur’s innovation-specific human capital loses its value, i.e. the innovation becomes marketable and the venture gets closer to an IPO, it is easier to attract professional managers to replace the entrepreneur. I will refer to the entrepreneur’s ability, through her own success, to bring about her own institutional demise as the *innovator’s dilemma*. As John Kenneth Galbraith put it: “The great entrepreneur must, in fact, be compared in life with the male ‘apis mellifera.’ He accomplishes his act of conception at the price of his own extinction.”<sup>72</sup> One would expect that an entrepreneur who is cognizant of this dilemma would engage in self-preserving strategic behavior aimed at making it more difficult for the venture capitalist to replace her with professional managers.

#### E. *The Informational Hold-Up Problem*

This section argues that an entrepreneur facing the innovator’s dilemma has an incentive to strategically manage the disclosure of innovation-specific information, something that can delay the completion of the innovation and create other costly side effects. We can label this self-

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<sup>71</sup> In calculating the value to an entrepreneur of remaining employed by the venture, one needs to take into account the existence of private benefits to the entrepreneur. See TIROLE, *supra* note 12, at 16–17 (discussing some of the private benefits that managers received from managing company).

<sup>72</sup> Rubenson & Gupta, *supra* note 44, at 167 (quoting JOHN K. GALBRAITH, *THE NEW INDUSTRIAL STATE* (1971)).

preserving non-disclosure or partial disclosure of information, the *informational hold-up* problem. This section examines three types of informational hold-up.

### 1. *Entrenchment*

An entrepreneur facing the innovator's dilemma and the prospect of being fired from the venture can *hold back* information and know-how to entrench herself. An entrepreneur will possess certain forms of knowledge that will allow her to best produce and market the innovation. This information may include such things as the range of uses of the new product, technological limitations and potential for new innovations to improve or complement it. The general organizational and management literature provides support for the proposition that managers and other employees tend to hoard information as a way of retaining their employment and increasing their power within the organization.<sup>73</sup> In addition, there is some evidence showing information hoarding within knowledge-intensive firms of the type financed by venture capitalists.<sup>74</sup> It

<sup>73</sup> See Vincent Alonzo and Daniel McQuillen, *Best Corporate Asset: Brain Power?*, 170 INCENTIVE 7 (Jan. 1996) (describing how some companies, like Coca-Cola Co., have hired "Chief Knowledge Officers" to "manage knowledge capital" and why it is "important to establish the proper environment, values, behaviors and measurements which reward behavior for contributing instead of just taking or hoarding information and knowledge"); Dianne J. Cyr & Susan C. Schneider, *Implications for Learning: Human Resource Management in East-West Joint Ventures*, 17 ORG. STUD. 207, 221 (1996) (a case study of three joint ventures between East and West European companies found that "employees in all three ventures indicated that communication . . . tended to be impeded by poor reporting systems, a need for expediency and efficiency, or hoarding information as a way to retain power"); Marc Hequet, *Risk (Presenting Innovative Ideas to Superiors)*, 33 TRAINING 84, 91 (June 1996) (reporting statement of Hewlett-Packard's director of education: "If information is not readily available, information becomes power . . . . And if people want to control power, then they keep information."); William Roth, *The Dangerous Ploy of Downsizing*, 18 BUS. FORUM 5, 6 (Sept. 22, 1993) (an informal empirical study of the effects of downsizing using a class of twenty M.B.A. students, all currently holding mid-level management positions, eighteen of whom had personally experienced the downsizing process and another four who had a close friend who had experienced downsizing, found that "after a downsizing program employees begin hoarding information to increase their value" to the firm); Michael Van Hoozer, *Beware of Data Hoarders—When Information Isn't Spread Around Due to Secrecy of Benign Neglect, The Organization Suffers*, INFORMATIONWEEK, May 30, 1994, at 100 (describing the effects of informational hoarding, what he calls the "knowledge is king syndrome"—that is, when individuals "intentionally withhold information from others to make themselves more valuable to their company").

<sup>74</sup> For example, in a case study of a personal computer firm that used ad hoc teams to address specific tasks, several managers interviewed stated that:

[H]oarding of valuable information was a common practice. The ad hoc teams often resisted sharing their unique information. The managers . . . speculated that this was because a team that shares its information fully may lose its reason to exist. This is

should be kept in mind that one argument usually proffered for the integration of production within firms (as opposed to production across markets) is that integration helps increase the transfer of information among firm members.<sup>75</sup> This is achieved, in part, through adoption of better coordination mechanisms and use of low-powered incentives.<sup>76</sup> All other things being equal, a firm in which information hoarding is prevalent will be at a disadvantage vis-à-vis firms within which information flows freely.

Finally, entrepreneurs are notorious for refusing to delegate authority to others within the venture.<sup>77</sup> Venture capitalists usually view this as further evidence of the “founder’s disease” – the belief that, as a general matter, entrepreneurs are unable to become effective managers. However, when one takes the informational hold-up problem into account, this reticence toward delegation can be seen not as a flaw, but as a survival strategy. Delegation would require the transfer of information and know-how, which makes the entrepreneur more vulnerable. Moreover, delegation can be costly to an entrepreneur, given that others within the venture are potential competitors for her position, and the more information they get from her, the more they become a viable alternative.<sup>78</sup>

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particularly true during the economically difficult times now facing the company . . . . In the information-based organization, information becomes the primary medium of value and exchange, and who would give it away for free?

Thomas H. Davenport et al., *Information Politics*, 34 SLOAN MGMT. REV. 53, 62 (1992); Harry J. Sapienza & Anil K. Gupta, *Pursuit of Innovation by New Ventures and Its Effects on Venture Capitalist-Entrepreneur Relations*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 304 (Robert H. Brockhaus, Jr. et al. eds. 1989) (providing anecdotal evidence of information hoarding in high-tech ventures).

<sup>75</sup> See Kenneth J. Arrow, *Vertical Integration and Communication*, 6 BELL J. ECON. 173 (1975).

<sup>76</sup> Low-powered incentives help enhance cooperation that in turn foster informational transfers. See Edward P. Lazear, *Pay Equality and Industrial Politics*, 97 J. POL. ECON. 561, 562 (1989) (arguing that, while competition among workers in an organization can lead to increased effort and output, competition also “discourages cooperation among [workers] and can lead to outright sabotage”).

<sup>77</sup> See Thomas J. Dean & G. Dale Meyer, *Venture Development in High-Technology Firms: The Impact of Managerial Qualities Across the Organizational Life Cycle*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 93, 104–05 (Robert H. Brockhaus, Jr. et al. eds. 1989) (empirical study finding that “failure to delegate and listen to others ranked high on the list of reasons” why founders fail); Gary E. Willard et al., *In Order to Grow, Must the Founder Go: A Comparison of Performance Between Founder and Non-Founder Managed High-Growth Manufacturing Firms*, 7 J. BUS. VENTURING 181, 182–83 (summary of literature on founders’ reluctance to delegate).

<sup>78</sup> See Rebecca Sisco, *Put Your Money Where Your Teams Are; Rewarding Teamwork*, 29 TRAINING 41 (July 1992) (arguing that organizations create a misincentive when “employees are urged to cooperate but paid to compete” since at best it “leads people to focus solely on their own behavior and not on improving work systems and processes” and at worst it “encourages them to sabotage one another’s performance by hoarding information, ignoring co-worker’s requests or

## 2. Monitoring Manipulation

Informational hold-up may also arise because of the fact that an entrepreneur's information and innovation-specific know-how can be used to evaluate the viability of the venture and the entrepreneur's performance.<sup>79</sup> The more information and know-how that others within the organization (including the venture capitalist) have regarding the innovation, the better they can evaluate the prospects and limits of the venture, and the more easily they can monitor the entrepreneur and measure her performance. Although an entrepreneur will have to disclose certain information about the innovation in order to convince the venture capitalist to fund subsequent stages, a rational entrepreneur will want to tailor the disclosure to minimize its usefulness in evaluating her overall performance.

## 3. Option Value from Saving Information

Informational hold-up may also occur because of the fact that an entrepreneur, anticipating the risk of being fired, will hope to retain exclusive access to innovation-specific know-how and information for use in future ventures.<sup>80</sup> Of course, there are usually contractual provisions to

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even making others look bad"); Beverly Geber, *The Bugaboo of Team Pay*, 32 TRAINING 25, 32 (Aug. 1995) (describing incentives of individuals to hoard information or scheme "to undermine rivals for a promotion they want"); Beverly Geber, *Virtual Teams*, 32 TRAINING 36 (Apr. 1995) ("organizations have created cultures in which informational hoarding is rewarded"). See also Edward P. Lazear & Sherwin Rosen, *Rank-Order Tournaments as Optimum Labor Contracts*, 89 J. POL. ECON. 841 (1981).

<sup>79</sup> In fact, an entrepreneur facing the possibility of being replaced or of having the venture liquidated will expend resources and time to try to influence the venture capitalist not to do so. These expenditures are deadweight costs since they are not aimed at increasing the size of the pie but at trying to influence how it is distributed. In an attempt to look good before the venture capitalist, the entrepreneur may also behave in a manner that will signal her competence, irreplaceability, or other important characteristics. These signaling activities are costly, not only because they take time, but because they may lead the entrepreneur to act in ways that reduce the firm's overall value. For a discussion of this sort of influence costs, see generally Paul R. Milgrom, *Employment Contracts, Influence Activities, and Efficient Organization Design*, 96 J. POL. ECON. 42 (1988).

<sup>80</sup> See, e.g., James J. Anton & Dennis A. Yao, *Start-ups, Spin-offs, and Internal Projects*, 11 J.L. ECON. & ORG. 362, 362 (1995) (examining "the incentive problem [created] when [an] employee privately discovers a significant invention and faces a choice between keeping the invention private and leaving the firm to form a new company (start-up), or transferring knowledge and attempting to gain compensation from the firm (spin-off)"); Sudipto Bhattacharya et al., *Licensing and the Sharing of Knowledge in Research Joint Ventures*, 56 J. ECON. THEORY 43 (1992) (examining the usefulness of two different types of licensing agreements in fostering the efficient sharing of knowledge and level of research and development); Ariel Pakes & Shmuel Nitzan, *Optimum Contracts for Research Personnel, Research Employment, and the Establishment of 'Rival' Enterprises*, 1 J. LAB. ECON. 345 (1983) (examining the problem of hiring research scientists when



prevent future competition and to prevent disclosure of trade secrets. Non-compete agreements, where enforceable, have to be narrowly tailored in order to withstand judicial scrutiny.<sup>81</sup> Non-disclosure agreements do provide greater constraints, but they usually apply only to company-specific information, which, of course, would not include information that the company had not been given. The corporate opportunity doctrine will also act as a constraint on future use of innovations developed while with the venture. Non-disclosure agreements, trade secret law and the corporate opportunity doctrine, however, may also produce perverse informational effects by giving entrepreneurs a further incentive to withhold information about new innovations that they have come up with while employed by the venture. This reluctance to reveal information about a second innovation is exacerbated by the general problem of establishing clear-cut property rights over it.<sup>82</sup>

#### *F. Misincentives Created by the Use of Staged Financing*

There are three types of self-preserving strategic behavior arising out of the use of staged financing. First, staged financing can lead to a ratcheting effect. Each time the venture capitalist provides funds to the firm it will usually provide some kind of performance objectives or milestone to be met by the firm before the venture capitalist agrees to provide more funds. An entrepreneur thus will have an incentive to provide just enough effort to meet the requirements for getting another round of financing, instead of rushing things or trying to overachieve. As we have already seen, an entrepreneur sometimes has an incentive to slow down the innovation process for other reasons.

Secondly, staged financing can lead to myopic behavior by entrepreneurs—a focus on meeting short-term pressures as opposed to maximizing long-term returns. Managers of public corporations sometimes engage in myopic behavior: due to the high-powered incentives of capital markets they choose to focus on projects that will yield relatively smaller returns in the short-run than those that will maximize the long-term profits

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one takes into account the possibility that they can later use the information they acquire while in the venture in a rival venture).

<sup>81</sup> See, e.g., Steven N.S. Cheung, *Property Rights in Trade Secrets*, 20 ECON. INQUIRY 40 (1982).

<sup>82</sup> See Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS, NATIONAL BUREAU OF ECONOMIC RESEARCH 609 (1962). See also James J. Anton & Dennis A. Yao, *Expropriation and Inventions: Appropriable Rents in the Absence of Property Rights*, 84 AMER. ECON. REV. 190 (1994); David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL. 285 (1986) (showing how in some cases those outside a firm (e.g., customers, competitors) can appropriate all or part of the economic rents from innovation).

of the company. High-powered incentives in venture capital contracts and, in particular, the use of staged financing are meant to replicate (as much as possible) the type of pressure provided by public markets. Not surprisingly, they can lead entrepreneurs to act myopically. One can contrast this result to Holmstrom's argument that one reason a disproportionate amount of innovation occurs in small firms is that they are not subject to the distorting, myopia-causing effects of the high-powered incentives of capital markets.<sup>83</sup> A venture capitalist may also engage in myopic behavior. For example, a venture capitalist holding a portfolio of companies may find that one company is a *star*—"a company which is so successful that it pays for all the failures and humdrum performers in [its] . . . portfolio."<sup>84</sup> A *star* will be sold through an initial public offering. After it is sold and the gains reaped, a venture capitalist that wants to close up the venture capital fund will liquidate certain ventures in the portfolio, particularly the "living dead" and the barely living.<sup>85</sup>

Thirdly, staged financing can create a prisoner's dilemma problem. By dividing the life of the venture into a set of short, discrete phases, staged financing increases the probability that the entrepreneur and the venture capitalist will find themselves in a short-run horizon situation in which it is in their individual interest to act opportunistically. Even if one of the parties is not facing a short-run horizon, it may still choose to act opportunistically if it believes that the other party is facing a short horizon. In some cases, both parties would be better off, as a group, if they abstained from acting opportunistically. Whenever they act contrary to this joint interest due to their short-term individual interests, they suffer a collective welfare loss. As such it is an instance of the prisoners' dilemma.

#### G. *The Costs Associated With the Failure of Otherwise Viable Ventures*

High-tech start-ups often fail. High failure rates are to be expected in any new venture, but especially in those built around technology-intensive products. As we saw above, governance structures based on physical, as opposed to intangible, assets allows the owner of those assets to specify how they are to be used, thereby reducing ex post opportunistic behavior.<sup>86</sup> Firms comprising mostly intangible assets tend to be harder to govern and keep together, since disagreement among firm members can lead to the exit

<sup>83</sup> See Holmstrom, *supra* note 8.

<sup>84</sup> See Richard Gourlay, *Survey of Venture and Development Capital*, FIN. TIMES, Sept. 23, 1994, at VI.

<sup>85</sup> See Klein, *supra* note 10, at 361 (in discussing contracts between publishers and songwriters, states that "the possibility for reverse publisher cheating is real. If for example, the songwriter unexpectedly become such a great success that current sales by this one [songwriter] represent a large share of the present discounted value of total publisher sales, the implicit contract enforcement mechanism may not work").

<sup>86</sup> See HART, *supra* note 9, at 3-4.

of one or more of them, and ultimately the firm's dissolution.<sup>87</sup> Both venture capitalists and entrepreneurs have some interest in showing commitment to the venture. If each party believes that the other is about to exit neither will have an incentive to invest in transaction-specific assets.<sup>88</sup> It follows that one way of showing this commitment is by making transaction-specific investments,<sup>89</sup> but as the venture's prospects decrease, parties will be less likely to continue doing so.<sup>90</sup>

The high number of failures among ventures financed by venture capitalists can, at least in part, be explained by governance shortcomings in venture capital contracts.<sup>91</sup> For example, Gorman and Sahlman have argued that in some cases "the [venture capital] process itself may promote failure."<sup>92</sup> In a similar vein, an empirical study of Silicon Valley firms found that entrepreneurs of failed firms considered "problems with the venture capital relationship" to be an important cause of their firm's failure.<sup>93</sup> The propensity of venture capitalists for firing entrepreneurs<sup>94</sup> and

<sup>87</sup> For a discussion of the "flimsiness" of firms caused by the lack of hard assets, see *id.* at 58–59.

<sup>88</sup> Samsom and Gurdon undertook a survey study of twenty-two scientists and twenty venture partners in order to discern the principal differences in approach to the venture between the two groups. The authors found that half of the ventures studied had experienced "serious venture team related upheavals since inception" of the venture. These upheavals usually resulted in one or more of the team members leaving the venture, whether scientist, venture capitalist or professional manager. The different team members were found to have different perspectives on the time required to finish the product, with scientists arguing for a longer period while venture capitalists were more concerned with getting the product to market as quickly as possible. See Karel J. Samsom & Michael A. Gurdon, *Entrepreneurial Scientists: Organizational Performance in Scientist-Started High Technology Firms*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 437, 443 (Neil C. Churchill et al. eds., 1990) (the authors conducted forty-two interviews with twenty-two scientists and twenty venture partners, mostly in New England and Quebec and Ontario).

<sup>89</sup> *Id.* at 107.

<sup>90</sup> *Id.* at 108.

<sup>91</sup> Generally, a "firm" can be viewed as a cooperative venture where the parties have common goals—maximizing the value of the firm—and potentially conflicting ones—maximizing their individual return—even if at the expense of other parties. Where conflicting goals become paramount, as when a firm approaches bankruptcy, the firm's viability can very quickly deteriorate. See THOMAS H. JACKSON, *THE LOGIC AND LIMITS OF BANKRUPTCY LAW* (1986).

<sup>92</sup> See Gorman & Sahlman, *supra* note 30, at 238 (arguing that "'failure' is at the very least endemic to the venture capital process, an expected, commonplace event; in some cases even the process itself may promote failure").

<sup>93</sup> The empirical study tracked 250 Silicon Valley firms since 1960. The authors found that (as of 1984) ninety-six firms had failed. Of those firms they successfully used a sample ten firms that failed in the 1960's and twelve firms that failed in the 1980's. Four of the eleven founders of the 1960 firms identified the category "[p]roblems with the venture capital relationship" as "a major cause of failure." One of the twelve 1980 founders found this category was a major cause of the firm's failure, while another three of the twelve interviewed found that it had played a part, but just a minor part in the firms' failure. See Albert W. Bruno & Joel

their use of high-powered incentives can undermine trust and cooperation within firms<sup>95</sup> and create other misincentives<sup>96</sup> that, in turn, can increase the likelihood that the firm will fail. Additionally, one would expect that the strategic behavior of entrepreneurs and venture capitalists will increase when the venture is experiencing financial or innovation setbacks—given that as the parties get closer to ending their relationship, reputational constraints will become less binding.<sup>97</sup> Finally, venture capitalists take the high failure rate of start-ups as a given; if for no other reason, one can infer this from the fact that they stage their capital inputs and adopt contracts

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K. Leidecker, *A Comparative Study of New Venture Failure: 1960 v. 1980*, FRONTIERS OF ENTREPRENEURSHIP RESEARCH 375, 382–83 (Neil C. Churchill et al. eds. 1987). See also Bruno et al., *supra* note 36, at 689 (arguing, generally, that problems with the venture capitalist relationship were an important factor in the failure of the firms that they sampled).

<sup>94</sup> See ROBERT J. KUNZE, NOTHING VENTURED: THE PERILS AND PAYOFFS OF THE GREAT AMERICAN VENTURE CAPITAL GAME (1990) (arguing that replacing the CEO of a young company can be highly destabilizing to the company, given that the time spent hiring the new chief executive officer, the shock to the organization when the changeover takes place, the lack of direction in the interim . . . all impact heavily on the health and potential of the company. In the best of circumstances replacing a chief executive officer is a wrenching experience and companies can easily fail at this juncture.).

<sup>95</sup> On the role of high-powered incentives in undermining cooperation and unity within a group, see Oliver Williamson, THE ECONOMIC INSTITUTIONS OF CAPITALISM, ch. 6 (1985); Bengt Holmstrom & Paul Milgrom, *Regulating Trade Among Agents*, 146 J. INST. & THEOR. ECON. 85 (1990); Hideshi Itoh, *Incentives to Help in Multi-Agent Situations*, 59 ECONOMETRICA 611 (1991); Edward P. Lazear, *Pay Equality and Industrial Politics*, 97 J. POL. ECON. 561 (1989).

<sup>96</sup> For example, in a report of the spate of biotechnology failures in 1994, one reason given by analysts for the failures was the fact that “[s]ome biotech companies, strapped for resources and under pressure from investors, have been cutting corners in designing and conducting their clinical trials, jeopardizing the usefulness of the results.” Alex Barnum, *High-Profile Flops Hit Biotech, Promising Drugs Often Founder in Human Trials*, S.F. CHRON., June 13, 1994, at B1 (reporting MedImmune, Inc.’s, failure to get FDA approval for the company’s lead product, due to sloppy clinical trials). See also Amar Bhidé, *Bootstrap Finance: The Art of Start-Ups*, 70 HARV. BUS. REV. 106 (1992) (arguing that “[c]onflicts between investors in a business and its day-to-day managers are a fact of life”; that outside investors, such as venture capitalists, can diminish the flexibility of entrepreneurs to adapt, to engage in “the try-it, fix-it approach required in the uncertain environments in which start-ups flourish”; and reporting the experience of a former CEO of an advanced materials company who succumbed to the pressures created by the outside investors to stick with the original strategy, even though he knew it was untenable—“I wish I had stood my ground and said, ‘I’m turning off the furnace tomorrow.’ But I didn’t quite have the guts to do that.”).

<sup>97</sup> See William D. Guth et al., *Cognition, Enactment and Learning in the Entrepreneurial Process*, in FRONTIERS OF ENTREPRENEURIAL RESEARCH 242 (Neil C. Churchill et al. eds. 1991) (noting entrepreneur’s increased focus on external risk factors as the venture experienced severe setbacks). For an example where such a spiraling effect and quick dissolution occurred in the venture capital area, see Foster v. Churchill, 665 N.E.2d 153 (N.Y. 1996).

with well-specified exit strategies.<sup>98</sup> It is important, however, to look at the issue of venture survival not only from the perspective of the venture capitalist and entrepreneur. Society has a vested interest in the survival of otherwise viable firms,<sup>99</sup> particularly given the social and economic importance of innovations.<sup>100</sup>

### III. ROADBLOCKS TO THE EMERGENCE OF OPTIMAL VENTURE CAPITAL CONTRACTS

The paper has so far identified various misincentives created by standard venture capital contracts. These misincentives can reduce social welfare by reducing the number of valuable innovations that get financed or make it to the market. It follows that identifying and reducing these misincentives can allow venture capitalists to design more efficient contracts, and, where they do not have the proper incentives, for a lawmaker to adopt legal rules to cause them to internalize the externalities produced by their standard contracts. This Part examines a number of roadblocks to the emergence of optimal venture capital contracts.

#### A. *Bargaining Power of Venture Capitalists*

In general, a bargaining context is one in which two or more parties negotiate with each other regarding the possibility of cooperating to produce a surplus that they would then divide in some way.<sup>101</sup> Venture

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<sup>98</sup> One reason that venture capitalists use staged financing is to keep open a greater number of outside options. One can assume that when the parties entered into the venture they did so because the expected returns from participating in the venture were greater than the expected return from accepting another investment option. However, during the life of the venture the party's outside options will change. It is possible that at some point a party will find that an outside option is more valuable than remaining in the venture. At that point, the party may choose to exit, leading to the dissolution of the venture. The outside options of the venture capitalist include new potential investments. The emergence of new outside options can lead a venture capitalist to liquidate a venture if it has tangible assets or intellectual property that can be sold to a third party. It may also lead the venture capitalist to sell the firm to a third party or the public sooner than optimal. *See generally* David Roth, *A Theory of Partnership Dynamics*, 12 *GAMES & ECON. BEHAV.* 95 (1996).

<sup>99</sup> In other words, we must analyze the extent to which negative externalities are produced that affect third parties. *See, e.g.*, PAUL MILGROM & JOHN ROBERTS, *ECONOMICS, ORGANIZATIONS AND MANAGEMENT* 75 (1992).

<sup>100</sup> *See, e.g.*, Eric L. Talley, *Disclosure Norms*, 149 *U. PA. L. REV.* 1955, 1956 (2011) (arguing that the distortions produced by the strategic behavior of parties when one party has superior information may lead parties to fail to reach beneficial bargains and, in certain cases, encourage value-destroying agreements).

<sup>101</sup> More specifically, a bargaining scenario is one in which (a) the parties have the potential to conclude an agreement beneficial to both, (b) there is conflict as to which agreement to conclude, and (c) no agreement may be imposed on a party without her approval. *See* MARTIN J. OSBORNE & ARIEL RUBENSTEIN, *BARGAINING AND MARKETS* 1 (1990).

capital contracts are in large part a set of rules for allocating surpluses and losses associated with the start-up. If the two parties are engaged in longer term transactions, where they will be bargaining repeatedly—as is the case in the venture capital context—it is useful to divide the types of stakes over which they bargain into *substantive stakes* and *procedural stakes*. Substantive stakes are the actual monetary surplus that the parties divide each round of their ongoing, repeated bargaining game. Each round the parties may also reach agreement on procedural stakes: the formal and informal constraints and governance rules that will be in effect in future bargaining rounds. These constraints and governance rules will in turn affect the bargaining power that each party will have in future periods. As a result, they will determine the way that substantive and procedural stakes are divided in future bargaining rounds. For example, one can analyze the informational holdup problem through a bargaining lens. The entrepreneur and the venture capitalist bargain both explicitly and implicitly over procedural stakes—innovation-specific information—that will affect future bargaining rounds.

There are a number of factors that give venture capitalists a bargaining advantage over entrepreneurs. Venture capitalists are repeat players who understand the transactions, potential risks, and contracts better than do entrepreneurs. In addition, venture capitalists know that once negotiations and due diligence get under way (a process that may take up to six months or more), the entrepreneur will have made transaction-specific investments that they will lose if the deal falls through. When that occurs, the entrepreneur will need to find a new venture capitalist interested in investing in the venture. However, the fact that one venture capitalist has already engaged in due diligence and rejected the deal will exacerbate the adverse selection problem faced by the entrepreneur. In other words, the rejection by the first venture capitalist will send a signal that there may be inherent problems with the proposed venture. This in turn will allow the initial or subsequent venture capitalist to extract from the entrepreneur a greater portion of the venture's expected returns. As a result, except for well-established entrepreneurs with a track record or a well-developed valuable innovation, entrepreneurs are usually at a bargaining disadvantage vis-à-vis venture capitalists. As we will now see, while having a bargaining advantage gives venture capitalists the ability to dictate contract terms, it can also lead to the emergence and survival of inefficient standard form contracts.

#### *B. Bargaining Distortions Due to Overwhelming Bargaining Power*

In theory, a rational venture capitalist will continue to add additional provisions to its contracts until the marginal cost of adding an additional provision equals the marginal benefit. All other things being equal, a contract will be more complete, the greater the bargaining power of one of

the parties at the time of entering into a contract. Where there are large asymmetries of bargaining power, the weaker party will be forced to either forego a deal altogether or accept contractual terms that are against its interest. The lack of resistance by the weaker party will lead to a reduced incentive by the dominant party to design contracts that increase the joint welfare of both parties. Additionally, the weaker party's suggestions are an important source of potential contractual innovation which is lost when the weaker party has no incentive to suggest modifications to the standard contracts. Over time, this asymmetry in bargaining power will lead to the emergence of one-sided standard contracts that benefit the dominant party.<sup>102</sup> There is no reason to believe *ex ante* that these contracts will maximize the joint welfare of the venture capitalist and entrepreneur and minimize negative externalities. In short, there is no reason to believe that standard venture capital contracts will maximize social welfare.

More generally, venture capitalists will have an incentive to modify their contracts each time a provision fails to act in the manner intended or a contractual gap is discovered. One would expect that over time contracts will become more complex and have multiple provisions targeting the same type of behavior.<sup>103</sup> Because of the one-sided nature of the contracting process, venture capitalists are unlikely to modify contracts in a way that reduces complexity and satisfies the principle of Occam's razor. Venture capitalists that can get an entrepreneur to agree to one-sided contract provisions may see little harm in doing so, since they can get the upside when they work as intended and waive them when they misfire.

There are three main problems with this line of reasoning. First, the entrepreneur will engage in self-preserving strategic behavior *vis-à-vis* the full set of contract provisions, given that the venture capitalist has not pre-committed to waiving any of them. An *ex ante* commitment to waiving them will be equivalent to not adopting them to begin with. Second, a decision by a venture capitalist not to enforce one contractual provision can have the unintended side-effect of reducing the disciplining effect of other provisions. In other words, when a venture capitalist agrees to a waiver, an entrepreneur will update her assessment of the likelihood that it will waive other provisions in the future. Third, because of the multi-layered, intertwined incentive mechanisms in venture capital contracts, the

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<sup>102</sup> See JACK KNIGHT, INSTITUTIONS AND SOCIAL CONFLICT 126–127, 140 (1992) (arguing that institutions and rules arise out of a process of strategic conflict in which actors vie for distributional advantage and that the party with superior resources and bargaining power will be able to force other parties “to act in ways contrary to their unconstrained preferences”; after a while self-enforcing rules—favorable to the party with the bargaining power—will emerge, and gather path dependence, even if they are not optimal).

<sup>103</sup> See Hellmann, *supra* note 23, at 25, n.32 (questioning why venture capitalists adopt multiple incentive mechanisms targeting the same type of behavior).

triggering of one provision can trigger others, thereby making selective waivers more difficult.

Because venture capitalists are repeat players, reputational concerns can, at least in theory, reduce their incentive to act opportunistically at the time of contracting or during the venture.<sup>104</sup> However, for reputation to be a viable constraint, future parties must be able to observe the opportunistic behavior or receive credible reports from third parties. They must also be able to distinguish between opportunism and proper behavior. When a venture capitalist decides to fire an entrepreneur or liquidate a venture, it weighs numerous factors and does so using information about the entrepreneur and venture not available to outside observers. This increases the difficulty of determining whether a venture capitalist is acting opportunistically. The problem is further exacerbated by the fact that a venture capitalist concerned about future litigation will have an incentive to leave a paper trail characterizing its behavior as justified and within the scope of its contract with the entrepreneur.<sup>105</sup>

### *C. The Exacerbating Role Played by Lawyers and Venture Capital Fund Investors*

Venture capitalists will have a comparative advantage in identifying misincentives created by the high-powered incentives in their standard form contracts, but unless legally trained they will have to rely on lawyers to advise them on potential legal and contractual risks. However, the interests of lawyers and venture capitalists will not always converge,<sup>106</sup> something that can lead to the emergence and survival of inefficient venture capital contracts.

First, lawyers will have an incentive to draft contracts that do not deviate too much from the contracts that they have used in the past with the same venture capitalist. This is not only because the venture capitalist will understand those contracts better, but also because changing them may signal that prior contracts drafted by the same lawyer were defective. Furthermore, lawyers have an incentive to adopt contracts similar to those adopted by other lawyers in similar transactions, so as to economize on interpretation costs and not appear as an outlier from the "herd" of venture

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<sup>104</sup> On reputation, see David Charny, *Nonlegal Sanctions in Commercial Law*, 104 HARV. L. REV. 373 (1990).

<sup>105</sup> See *Foster v. Churchill*, 665 N.E.2d 153 (N.Y. 1996) (venture capitalists fired founders "for cause," but court found that the reasons given for termination were groundless).

<sup>106</sup> For a discussion of the potential divergence of interest between corporate lawyers and their clients, see generally Marcel Kahan & Michael Klausner, *Path Dependence in Corporate Contracting: Increasing Returns, Herd Behavior and Cognitive Biases*, 74 WASH. U. L. Q. 347 (1996).



capitalist lawyers.<sup>107</sup> The emergence of standard forms in the venture capital context is in part a product of the fact that the community of lawyers working on these contracts is relatively small and geographically concentrated. This makes it easier for lawyers to observe and copy what others are doing. Moreover, these lawyers are repeat players who sometimes represent venture capitalists and other times represent investors in venture capital funds or entrepreneurs. This dulls the incentive to propose innovative contract provisions and forcefully argue for them. Finally and relatedly, deviations from standard forms require a lawyer to expend resources to innovate; but once she has developed a new contract she will not be able to exclude others from free riding on her efforts.<sup>108</sup>

The contracting decisions of venture capitalists are also affected by the fact that they will have to raise funds from investors. Standard limited partnership agreements between an investor and venture capitalists contain provisions that allow the investor to monitor and discipline the venture capitalists, as well as a number of other incentive mechanisms to assure that they exert the right amount of effort and do not collude with entrepreneurs.<sup>109</sup> A venture capitalist contemplating making changes to the contracts with its portfolio companies (i.e. to its venture capital contracts) has to weigh the potential benefit from such changes against the potential costs if the changes backfire. Using standard agreements increases the likelihood that investors will understand them and find them acceptable. In short, investors in venture capital funds are repeat players who have certain expectation about what venture capital contracts look like.<sup>110</sup>

Finally, in deciding whether to make changes to these contracts, a venture capitalist will also want to take into account the probability that investors will credit any increase or decrease in the fund's returns to these changes. Moreover, a venture capitalist will have an incentive to make changes whose effect will be more easily observed and measured by the

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<sup>107</sup> In other words, if the contracts turn out to be defective, the whole herd can share the blame. See *id.* at 355–56 (discussing herding model set forth in David Scharfstein & Jeremy Stein, *Herd Behavior and Investments*, 80 AM. ECON. REV. 465 (1990)).

<sup>108</sup> According to Bankman, the potential "free rider" problem arising from the lack of property rights over the contractual innovation is one of the reasons that venture capitalists have not changed the way that ventures are structured to take advantage of tax savings. See Joseph Bankman, *The Structure of Silicon Valley Start-Ups*, 42 UCLA L. REV. 1737 (1994).

<sup>109</sup> The standard agreements include covenants (1) restricting the amount of funds that can be invested in any one venture, (2) limiting borrowing, (3) limiting re-investments, (4) restricting the venture capitalist's outside activities and ability to start other funds, and (5) restricting the types of ventures in which the venture capitalists can invest. See Keith W. Schilit, *Evaluating the Performance of Venture Capital Investments*, 37 BUS. HORIZ. 70 (1994).

<sup>110</sup> See Michael Klausner, *Corporate Law, and Networks of Contracts*, 81 VA. L. REV. 757, 786–89 (1995) (discussing learning effect when repeat players are involved).

investor. Using vanilla, high powered-incentives is a better signal of the venture capitalist's concern with adequately motivating entrepreneurs than is tailoring venture capital contracts to deal with the more difficult to observe and quantify misincentives identified in Part II. So one can conjecture that one reason that venture capitalists have not dealt with these misincentives is they believe that investors will not be able to properly value their efforts in tailoring their contracts.

#### D. *Entrepreneurial Overoptimism*

A number of studies have found that entrepreneurs tend to be overoptimistic about their own abilities and are less likely to thoroughly search for information at the time of forming a venture. According to various studies, reported by March and Shapira, managers generally believe that "risk is manageable,"<sup>111</sup> and that they can control it.<sup>112</sup> This belief in their ability to control risks leads them to be overoptimistic and undervalue statistical information that could be relevant to their decision-making.<sup>113</sup> A number of studies, however, have shown that entrepreneurs tend to be more overoptimistic than both professional managers and non-entrepreneurs.<sup>114</sup> Furthermore, studies show that "entrepreneurs, whether well prepared or not, may experience 'entrepreneurial euphoria,' in which they begin with a belief that they will succeed and then assess their odds accordingly."<sup>115</sup>

One study found that "entrepreneurs perceive their prospect for success as substantially better than those for similar businesses" and that "entrepreneurs' perceptions of their own chances for success do not seem to be systematically related to factors which previous research suggests might

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<sup>111</sup> See James G. March & Zur Shapira, *Managerial Perspectives on Risk and Risk Taking*, in DECISIONS & ORGANIZATIONS 76, 85 (James G. March ed. 1988) (managers surveyed believed that the situations that they faced involved risk-taking, where managerial skill and information can reduce the uncertainty, "not gambling" where the odds are uncontrollable, and produced by outside factors).

<sup>112</sup> *Id.* (seventy-five percent of managers, in a survey carried out by Shapira, saw "risk as controllable").

<sup>113</sup> *Id.* at 86-88.

<sup>114</sup> See, e.g., Daniel M. Spitzer, Jr. et al., *Business Planning in New, High Technology Firms*, in FRONTIERS ENTREPRENEURIAL RESEARCH 398 (1989); Gaylen N. Chandler & Erik Jansen, *The Founder's Self-Assessed Competence and Venture Performance*, 7 J. BUS. VENTURING 223, 233 (1992) (in a survey study of founders, finding that founders of high-growth companies rate themselves highly on traditional entrepreneurial skills as well as in managerial and technical skills); Arnold C. Cooper, Carolyn Y. Woo & William C. Dunkelberg, *Entrepreneurs' Perceived Chances for Success*, 3 J. BUS. VENTURING 97, 98 (1988); Norris F. Krueger, *The Impact of Prior Entrepreneurial Exposure On Perceptions of New Venture Feasibility and Desirability*, 18 ENTREPRENEURSHIP THEORY & PRAC. 5, 13 (1993). See also March & Shapira, *supra* note 111, at 85 (quoting a successful high tech entrepreneur: "In starting my company I didn't gamble; I was confident we were going to succeed.").

<sup>115</sup> See, e.g., Cooper et al., *supra* note 114, at 107.

be associated with success.”<sup>116</sup> The entrepreneurs in the study were asked two questions:

- “What are the odds of *your business* succeeding?”
- “What are the odds of *any business like yours* succeeding?”

The entrepreneurs were asked to choose odds ranging from a 0 chance in 10, to a perfect 10 chances in 10 of success. They found that: (1) 95% of the entrepreneurs believed the odds of success of *their business* to be at least 5 in 10, as opposed to a belief that only 78% of *any business like theirs* had odds of success of at least 5 in 10 (2) 81% perceived the odds of success of *their business* to be at least 7 in 10, as opposed to 39% of *any business like theirs* (3) 55% perceived the odds of success of *their business* to be at least 9 in 10, as opposed to 16% of *any business like theirs*, and (4) 33% perceived the odds of success of *their business* to be a perfect 10 out of 10, as opposed to 11% of *any business like theirs*.<sup>117</sup> In short, entrepreneurs are far more confident in their business succeeding than a business like theirs succeeding. The authors conclude that these assessments did not comport with the rational choice model, and were better explained by the cognitive literature on overconfidence.<sup>118</sup>

A number of studies have also shown that entrepreneurs tend to interpret facts more optimistically than do non-entrepreneurs. In other words, when a professional manager and an entrepreneur are presented with the same set of facts about a potential venture, the entrepreneur interprets the facts more positively. Thus, although both the entrepreneur and professional manager have the same attitude about the level of risk that they would be willing to undertake, the entrepreneur frames and interprets the facts in a manner that leads her to perceive the venture as being less risky.<sup>119</sup>

<sup>116</sup> *Id.* at 106.

<sup>117</sup> *Id.* at 103.

<sup>118</sup> *Id.* at 106. Similarly, in a survey study of 576 entrepreneurs in high technology companies, Spitzer et al. found a level of entrepreneurial overconfidence comparable to that found by Cooper et al. In the survey, respondents estimated *their* chances for success to be 74.1%, on average. On the other hand, they estimated the chance of success for *a business like yours* to be 43.3%, on average. See Spitzer, Jr. et al., *supra* note 114, at 404–05. See also Krueger, *supra* note 114, at 13 (finding further support for the Cooper, Woo and Dunkelberger data regarding the general overoptimism of entrepreneurs).

<sup>119</sup> For example, Palisch and Bagby found that entrepreneurs categorize equivocal business scenarios more positively than did other subjects, “perceiving more strengths than weaknesses, opportunities versus threats, and potential for performance improvement versus deterioration.” See Leslie Palisch & D. Ray Bagby, *Using Cognitive Theory to Explain Entrepreneurial Risk-Taking: Challenging Conventional Wisdom*, 10 J. BUS. VENTURING 425, 433 (1995). See also Donald D. Myers & Daryl J. Hobbs, *Technical Entrepreneurs—Are They Different?*, in FRONTIERS OF ENTREPRENEURIAL RESEARCH 659, 670 (Robert Ronstadt et al. eds. 1986) (survey of over 1000 entrepreneurs or individuals who

In a study of information gathering by new entrepreneurs in 1,176 ventures, the authors found that the entrepreneurs were less likely to acquire information relevant to the venture. The study analyzed the extent to which entrepreneurs in the process of forming a new venture acquired and used information from professional experts such as accountants, lawyers and bankers. The study had three main findings. First, entrepreneurs without prior experience sought information from friends, family and other business owners, but, surprisingly, did not seek much information from experts.<sup>120</sup> Second, experienced entrepreneurs going into business in areas very different from their prior venture were less likely to seek new information, showing a degree of overconfidence.<sup>121</sup> Third, the more confident<sup>122</sup> the entrepreneurs, the less likely they were to seek information, particularly from professionals.<sup>123</sup> The authors conclude that overconfidence leads entrepreneurs to underappreciate the need to acquire information about transactional hazards.<sup>124</sup>

Additionally, new entrepreneurs are more likely to be at an informational disadvantage than are venture capitalists, given the newness of the transactional environment<sup>125</sup> and of the relevant types of information,<sup>126</sup> as well as their lack of prior contact with clients, financiers, lawyers and other professionals.<sup>127</sup> They may not know what type of

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showed interest in entrepreneurship found that 62.2% strongly agreed with the proposition that as an entrepreneur you can better control outcomes in your life).

<sup>120</sup> Arnold C. Cooper et al., *supra* note 114, at 114–15. See also David Forlani & John W. Mullins, *Perceived Risks and Choices in Entrepreneurs' New Venture Decisions*, 15 J. BUS. VENTURING 305, 317 (2000) (concluding that more research needs to be done to learn more about “how entrepreneurs search for and process information about business situations and how such information processing influences entrepreneurial behavior”).

<sup>121</sup> Cooper et al., *supra* note 114, at 115.

<sup>122</sup> To test the level of optimism, the authors asked the subjects the following questions: “What are the odds of your business succeeding? What are the odds of any business like yours succeeding?” *Id.* at 112.

<sup>123</sup> *Id.* at 117.

<sup>124</sup> The study did find that in larger, more complex ventures, the entrepreneurs did seek some expert advice. *Id.* at 118.

<sup>125</sup> Entrepreneurs usually have little experience in dealing with complex transactional environments like the one that they are thrust into when they seek venture capital funds. Donald C. Langevoort, *Selling Hope, Selling Risk: Some Lessons for Law from Behavioral Economics About Stockbrokers and Sophisticated Customers*, 84 CALIF. L. REV. 627, 637–41 (1996) (discussing various “cognitive illusions” that may lead even sophisticated investors to purchase overly risky securities, including the role of overconfidence in stock picking, social comparison biases, and “loss framing,” where an investor in a losing streak may decide that further risk-taking is required to make up for the losses).

<sup>126</sup> See Robert G. Lord & Karen J. Maher, *Alternative Information-Processing Models and Their Implications for Theory, Research & Practice*, 15 ACAD. MGMT. REV. 9, 13–14 (1990).

<sup>127</sup> See Ken G. Smith et al., *Organizational Information Processing, Competitive Responses, and Performance in the U.S. Domestic Airline Business*, 34 ACAD. MGMT. J. 60, 64 (1991) (arguing that managers with an external orientation,

information to acquire or what questions to ask—in short, they may be ignorant about the parameter of the problem that they are trying to solve. Moreover, they have little experience dealing with complex contracts, such as venture capital contracts.<sup>128</sup>

While overoptimism may help an entrepreneur during the process of innovation, it is a liability at the time of bargaining with venture capitalists. Overoptimism can lead an entrepreneur to enter into contracts that do not reflect the actual risks involved, including underestimating the probability that the venture capitalist will act opportunistically. As the venture progresses and the entrepreneur becomes more cognizant of the risks associated with venture-capital contracts, one would expect her to engage in the self-preserving strategic behavior discussed in Part II. In a sense, venture-capitalist financed firms are much like a marriage, in that the partners come to learn much about each other only after entering into the transaction, and, as in marriage, there is always the possibility that a divorce will ensue.<sup>129</sup>

#### *E. The Projection Bias: Background*

At the time of agreeing to a transaction both the entrepreneur and venture capitalist need to try to predict how their own preferences and that of the other party may change over time. These predictions will affect the parties' decision of whether to enter into a contract and, if so, what provisions to include in it. A number of empirical studies have found that individuals systematically mispredict how their preferences (and those of others) will evolve over time.<sup>130</sup> That is, when individuals try to predict

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outside experiences, are more efficient in gathering and processing a wider array of information than are managers with an internal orientation).

<sup>128</sup> This does not mean that all entrepreneurs will always find themselves in this position, just that vis-à-vis the venture capitalists, they are more likely, given their inexperience, to be at a cognitive disadvantage.

<sup>129</sup> As Gary Becker puts it:

Several years of marriage is usually a far more effective source of information on love and many other traits than all the other proxies available prior to marriage. I suggest that marriages fail early primarily because of imperfect information in marriage markets and the accumulation of better information during marriage. This suggestion is supported by the fact that unexpected changes in earnings and health do raise the probability of divorce.

GARY S. BECKER, *A TREATISE ON THE FAMILY* 328 (1991).

<sup>130</sup> For example, a study of the preferences of pregnant women regarding the use of anesthesia during labor found that when the women were asked about their preferences one month before labor, while they were in a cold psychological state, they preferred not to use anesthesia; however, when they were in labor and in pain, their preferences changed to wanting anesthesia. Jay J.J. Christensen-Szalanski, *Discount Functions and the Measurement of Patients' Values: Women's Decisions*

their future preferences, they tend to project their current preferences (as influenced by the psychological states that they are in at the time) onto those future preferences. This projection bias is particularly prominent when people are in a “hot” psychological state either at the time when they make an intertemporal decision *or* when they are called to follow through with one of their past decisions.<sup>131</sup> Hot psychological states include such states as anger, hunger, fear, depression, jealousy, infatuation, curiosity, anxiety, sleepiness, pain, sexual arousal and the craving of addictive substances, such as drugs, alcohol and nicotine.<sup>132</sup>

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*During Childbirth*, 4 MED. DECISION MAKING 47, 50–53 (1984). Sexual arousal can also lead to incorrect predictions regarding future preferences. See Ron S. Gold, *On the Need to Mind the Gap: On-Line Versus Off-Line Cognitions Underlying Sexual Risk-Taking*, in THE THEORY OF REASONED ACTION: ITS APPLICATION TO AIDS-PREVENTIVE BEHAVIOR 227, 229–30 (Deborah J. Terry et al. eds., 1993) (discussing discounting of future (remote) negative consequences of unprotected sex when individuals are sexually aroused and face “an urgent desire that demands immediate fulfillment”); George F. Loewenstein et al., *The Effect of Sexual Arousal on Expectations of Sexual Forcefulness*, 34 J. RES. CRIME & DELINQ. 443, 455–56 (1997) (describing study finding that male subjects who were shown sexually arousing photographs were more likely to predict that they would act sexually aggressively on date than those who were not shown arousing photographs). There is evidence that individuals also tend to underestimate how much they will crave drugs, alcohol, and nicotine when they are exposed to drug, alcohol, and cigarette “cues.” See generally David Laibson, *A Cue-Theory of Consumption*, 116 Q.J. ECON. 81 (Feb. 2001) (discussing role of environmental “cues” on habit-forming behavior such as smoking and addiction); George Loewenstein, *Out of Control: Visceral Influences on Behavior*, 65 ORG. BEHAV. & HUM. DECISION PROCESSES 272, 272 (1996) [hereinafter *Out of Control*] (discussing role of hot states on drug addiction).

<sup>131</sup> See George F. Loewenstein et al., *Projection Bias in Predicting Future Utility*, 118 Q.J. ECON. 1209, 1212–16 (Nov. 2003) [hereinafter *Projection Bias*] (developing projection bias model to provide theoretical underpinning for evidence on hot state decision-making). Under the projection bias model, an individual’s predictions of her future preferences will tend to lie somewhere in between the true preferences that she will have in the future and her current preferences. *Id.* at 1210–11.

<sup>132</sup> See George Loewenstein & David Schkade, *Wouldn’t It Be Nice? Predicting Future Feelings*, in WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY 85, 98 (Daniel Kahneman et al. eds., 1999) (discussing “hot” states, such as anger, hunger, pain, and sexual excitement). An individual may go from being in a cold psychological state to being in a hot one when she experiences certain emotional or biological triggers. See *Out of Control*, *supra* note 130, at 273 (discussing how visceral factors are triggered by such factors as stimulation and deprivation). All of these hot states and analogous ones share three important characteristics. First, they are temporary or transient. Hot states do not last forever; eventually a person will find herself back in a cold, unperturbed state, although, how long hot states last may vary. Second, hot states focus the decision-maker’s attention: they motivate her, whether consciously or unconsciously, to act or refrain from acting. Hot states may distract or intercept a decision-maker’s deliberations, prod her to act without giving much thought to the consequences, or take over complete control of the reasoning process. Third, hot states are not isolated perturbations of our psyches; they pervade the lives of individuals, they appear, disappear, and they recur. *Id.* at 274–75.

For example, assume that an individual is to attend a meeting and has to order her lunch one week in advance. She can choose either the Spartan one-course lunch or the gargantuan four-course one. In making this decision, she should try to predict how hungry she will be the following week without being influenced by whether, at the time of ordering, she happened to be hungry or sated. However, a number of studies have found that individuals suffer from a projection bias in such instances,<sup>133</sup> even though being hungry or sated are feelings that individuals experience daily, and which one would expect they would become better at predicting.<sup>134</sup>

Two principal types of hot-state distortions can lead decisionmakers to incorrectly predict their future preferences. First, a decisionmaker making an intertemporal choice, while in a cold psychological state, will tend to

<sup>133</sup> A number of studies have found that individuals tend to project their current level of hunger or satedness onto their predictions of how hungry or sated they expect to be in future periods, as well as onto other related preferences. In one study, individuals had to choose between fruit or junk food to be received in one week. See generally Daniel Read & Barbara van Leeuwen, *Predicting Hunger: The Effects of Appetite and Delay on Choice*, 76 *ORG. BEHAV. & HUM. DECISION PROCESSES* 189, 196–97 (1998). Some individuals made the choice while hungry, others while sated. *Id.* The study found that a larger proportion of the hungry group than the sated group chose the unhealthy junk food over the fruit. *Id.* at 197–98. In another study, supermarket shoppers were asked before they went into the store to make a shopping list of the items that they intended to purchase. Daniel T. Gilbert et al., *The Future is Now: Temporal Correction in Affective Forecasting*, 88 *ORG. BEHAV. & HUM. DECISION PROCESSES* 430, 437–38 (2002). Some shoppers were given a muffin to eat before shopping (the sated group) while other shoppers were not given a muffin (the hungry group). *Id.* at 438. Shoppers who did not eat a muffin before entering the store purchased a larger proportion of unplanned items (items not on their shopping list) than shoppers in the sated group. *Id.* at 439. The result held true independently of whether or not the shoppers were allowed to take the shopping list into the store. *Id.* Shopping lists, however, may act as a sort of self-regulation mechanism. See Russell Abratt & Stephen Donald Goodey, *Unplanned Buying and In-Store Stimuli in Supermarkets*, 11 *MANAGERIAL & DECISION ECON.* 117–18 (1990) (presenting study of supermarket shoppers with and without shopping lists; shoppers without shopping lists claimed that twenty-five percent of their purchases were unplanned, while shoppers with shopping lists claimed that only sixteen percent of their purchases were unplanned).

<sup>134</sup> While one would expect that repeated exposure to the same or analogous hot states will lead to a learning effect, the evidence suggests otherwise. See Jay J.J. Christensen-Szalanski, *Discount Functions and the Measurement of Patients' Values: Women's Decisions During Childbirth*, 4 *MED. DECISION MAKING* 47, 51 (1984) (finding that pregnant women who mispredicted that their preferences regarding anesthesia would change when in active labor, again mispredicted when asked month after labor); Leaf Van Boven et al., *Mispredicting the Endowment Effect: Underestimation of Owners' Selling Prices by Buyer's Agents*, 51 *J. ECON. BEHAV. & ORG.* 351, 362–63 (2003) (discussing learning limitations in endowment-effect projection bias). Moreover, even though some individuals are aware at some level that they will experience a projection bias in the future, when they are in the midst of hot states they once again succumb to the bias. See also Loewenstein, *Projection Bias*, *supra* note 131, at 1215 (illustrating example of folk wisdom to “never shop on an empty stomach” as evidence of awareness of projection bias).

underappreciate the full magnitude of changes in her preferences caused by future hot states.<sup>135</sup> Second, a decisionmaker making an intertemporal choice, while in a hot psychological state, will tend to mispredict how long the hot state will last<sup>136</sup> and how different she will feel in the future when she is back in a cold state; this is true even though the decision-maker knows that the hot state is transient in nature and will eventually come to an end.<sup>137</sup> Importantly, the claim is not that individuals do not know that they are experiencing potentially transient feelings, although if they are in the midst of a visceral state of high enough intensity—for example, infatuation—they may not be fully cognizant of it. Instead, the problem is that while individuals may fully understand that going from cold states to hot ones, or vice versa, will have some effect on their preferences, they still tend to underappreciate by how much their preferences will change.<sup>138</sup>

Finally, individuals trying to predict the preferences of others tend to utilize their own preferences in making those predictions.<sup>139</sup> For example, an individual in a cold state trying to predict the hot state preferences of another individual will first try to predict the preferences that she herself would have if she were the one in the hot state. She would then use those *intrapersonal* predictions to make her *interpersonal* predictions of the hot-state preferences of the other individual.<sup>140</sup> Therefore, if that individual's predictions about her own preferences are subject to the projection bias, her predictions about the other person's preferences, which are based on her faulty intrapersonal predictions, will tend to be affected by the bias. A number of studies have found that individuals project their own projection bias onto others in this fashion.<sup>141</sup> One would expect that this interpersonal

<sup>135</sup> See *Out of Control*, *supra* note 130, at 281 (arguing that individuals tend to underestimate impact of hot states on their future actions).

<sup>136</sup> Individuals tend to incorrectly predict how long certain feelings will last, even though they experience those feeling repeatedly. See Timothy D. Wilson et al., *Lessons from the Past: Do People Learn from Experience That Emotional Reactions are Short-Lived?*, 27 PERSONALITY & SOC. PSYCHOL. BULL. 1648 (2001).

<sup>137</sup> See *Projection Bias*, *supra* note 134, at 1228–29 (discussing irreversible decisions made by individuals while in hot states, believing incorrectly that hot states would persist for longer periods).

<sup>138</sup> *Id.* at 1210 (stating that under projection bias model, decision-maker correctly predicts direction of her changes in preferences, but underappreciates full magnitude of those changes).

<sup>139</sup> For a discussion of studies finding interpersonal projections, see Stephen J. Hoch, *Perceived Consensus and Predictive Accuracy: The Pros and Cons of Projection*, 53 J. PERSONALITY & SOC. PSYCHOL. 221, 223–24 (1987).

<sup>140</sup> See *Out of Control*, *supra* note 130, at 284.

<sup>141</sup> See Leaf Van Boven et al., *Mispredicting the Endowment Effect: Underestimation of Owners' Selling Prices by Buyer's Agents*, 51 J. ECON. BEHAV. & ORG. 351, 363 (2003) (discussing findings that party's biased predictions (due to projection bias) "will lead them to make biased predictions of other people's preferences"); Leaf Van Boven et al., *Egocentric Empathy Gaps Between Owners and Buyers: Misperceptions of the Endowment Effect*, 79 J. PERSONALITY & SOC. PSYCHOL. 66, 72–73 (2000) [hereinafter *Egocentric*] (finding that projection bias



projection of the projection bias is particularly important when individuals interact in transactional contexts.<sup>142</sup>

#### F. *The Projection Bias and the Venture Capital Contracting Process*

When an entrepreneur bargains over the terms of a venture capitalist's investments and the contracts that will govern their relationship, she will need to predict how her preferences and those of the venture capitalist may change over time. At the start of the venture, the entrepreneur and venture capitalist are in a cold psychological state. In predicting the extent to which their preferences may change during future hot states, the entrepreneur will tend to give added weight to her cold-state preferences. According to the projection bias, this will lead her to underappreciate the full magnitude of her own and the venture capitalist's temptation to act opportunistically in future hot states. This will lead entrepreneurs to underappreciate the extent to which they need to bargain for contractual provisions to address these future hot-state temptations. More generally, the projection bias can lead contracting parties to leave their contracts more incomplete than they would if they were able to make more accurate predictions of how hot states can distort their current and future preferences. However, given that venture capitalists use standardized contracts, it is the entrepreneur who is most likely to be harmed by the projection bias.

While an entrepreneur will obviously want to determine what contractual provisions are needed to constrain the future actions of the venture capitalist, there are two reasons why an entrepreneur may also want to enter into self-regulation contracts to restrict her *own* ability to act in future hot states.<sup>143</sup> First, an entrepreneur may want to prevent her future

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affects interpersonal predictions in context of under-appreciation of endowment effect); Leaf Van Boven & George Loewenstein, *Social Projection of Transient Drive States*, 29 PERSONALITY & SOC. PSYCHOL. BULL. 1159, 1165 (2003) (finding that projection bias affects interpersonal predictions in the context of feelings of hunger, thirst, and warmth).

<sup>142</sup> See *Egocentric*, *supra* note 141, at 66 (arguing that incorrect predictions by buyers and sellers regarding full magnitude of endowment effect can lead to value-maximizing transactions not getting done).

<sup>143</sup> Generally, any attempt to bridge the gap between our perceived interests and our actual behavior, to override the urge or temptation posed by self-control problems, is an effort at "self-regulation." See George Ainslie, *The Dangers of Willpower*, in GETTING HOOKED: RATIONALITY AND ADDICTION 65, 67–68 (Jon Elster & Ole-Jørgen Skog eds., 1999); ROY F. BAUMEISTER ET AL., LOSING CONTROL: HOW AND WHY PEOPLE FAIL AT SELF-REGULATION 6–7 (1994) (describing ability among human beings "to exert control over one's own inner states, processes, and responses" and defining self-regulation as "any effort by a human being to alter its own responses" so as to override push to act in ways that diverge from what they really want and describing the interplay of preferences over conflicting rewards). The term "self-regulation" can be used broadly to include not only an individual's attempt to regulate his own self-control problems, but also the self-control problems of others. It is possible to envision scenarios in which one party enters

selves from taking hot-state actions that lead to retaliatory or other tit-for-tat reactions by the venture capitalist. Provoking such reactions can make both parties worse off. Second, at the time of forming the venture, an entrepreneur may have strict preferences to avoid taking hot-state actions that undermine other goals. For example, an entrepreneur may want to avoid opportunistic behavior that undermines her personal moral code or that threatens the survival of the venture.

Finally, the overall efficiency of venture investing is closely tied to the fundraising environment faced by venture capitalists—i.e. whether they are in a boom period, when a lot of funds are flowing into venture capital partnerships or one in which institutions are far more reticent.<sup>144</sup> In boom periods, when “too much money is chasing too few deals,” valuations tend to go up due to the competition between venture capitalists to find investments in a limited number of start-ups.<sup>145</sup> Because of the options feature of staged investing, one would expect that during boom periods venture capitalists would have an incentive to commit funds without thoroughly screening entrepreneurs, and to make as many investments as possible, waiting until later to decide whether to exercise their option to invest in a second stage. The projection bias and hot psychological states can help explain some of the over-entry and boom-bust cycles observed in recent years. Even if venture capitalists and their investors know that they are overinvesting due to hot psychological states fueled by hot IPO and merger markets, the projection bias tells us that they will tend to mispredict the full magnitude of their distortion.

#### G. *Time-Inconsistent Preferences and Venture Capital Contracts*

Standard economic models assume that actors have time-consistent preferences, in the sense that they do not experience systematic self-control problems solely due to the fact that they give added weight to immediate gratification. But there is a large body of empirical evidence showing that people routinely exhibit time-inconsistent preferences, because of a short-term preference for immediate gratification that leads them to override their

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into a contract aimed at addressing the potential opportunistic behavior of the other party, where the opportunistic behavior can be the result of a calculated action, or due to self-control problems, such as hot-state actions. It is useful in designing contracts and legal rules to clearly identify the sources of the behavior to be regulated, since dealing with self-control problems require different approaches.

<sup>144</sup> GOMPERS & LERNER, *supra* note 7, at 135. See also Paul Gompers & Josh Lerner, *The Use of Covenants: An Empirical Analysis of Venture Partnership Agreements*, 39 J. L. & ECON. 463, 464 (1996) (finding, analogously, that when venture capitalist are in too much demand, investors in venture capital limited partnerships require less stringent contractual covenants).

<sup>145</sup> Paul A Gompers, *The Rise and Fall of Venture Capital*, 23 BUS. & ECON. HIST. 1, 10 (1994) (looking at venture capital boom in the late 1960s followed by a bust in the 1970s); William A. Sahlman & Howard Stevenson, *Capital Market Myopia*, 1 J. BUS. VENTURING 7, 20–21 (1986).

long-term preferences. It is this asymmetry between long-term and short-term impatience that leads people to procrastinate and over-consume.<sup>146</sup> This section argues that time-inconsistent preferences can lead to inefficient contracting decisions by both entrepreneurs and venture capitalists. In particular, it argues that time-inconsistent preferences can affect the decisions of entrepreneurs when they are searching for a potential venture capitalist to invest in their venture, deciding how much information to acquire regarding potential transactional risks, and negotiating with venture capitalists over the contracts that will govern their relationship. When combined, these three distortions in the contracting decisions of time-inconsistent entrepreneurs can lead them to enter into contracts that are sub-optimal, at least when compared with the types of contracts predicted standard venture capital models, which assume that entrepreneurs have time-consistent preferences.

### *1. Procrastination and Overconsumption in Connection with the Search for Funding*

An entrepreneur that has decided to bring in a venture capitalist as an investor will still need to incur costs to find a venture capitalist who is willing to invest and that is a good fit. Searching for potential investors imposes an immediate cost on the entrepreneur; the higher these cost the more likely that an entrepreneur will procrastinate trying to secure funding from venture capitalists. At the same time, when the entrepreneurial market is “hot” in the sense that there are a lot of potentially viable start-ups, venture capitalists will actively seek out entrepreneurs and offer them a large amount of money up front. While this two prong strategy makes perfect sense, even if all entrepreneurs had time-consistent preferences, it is likely to be particularly effective with time-inconsistent entrepreneurs.

By actively seeking out entrepreneurs, a venture capitalist lowers the immediate search costs that they must incur to find funding, thereby reducing their incentive to procrastinate. Moreover, by offering a time-inconsistent entrepreneur an immediate reward—a large, up-front cash

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<sup>146</sup> Importantly, economists embraced exponential discounting because it made their models more tractable mathematically, not because they believed that real-world actors use exponential functions. See GARY S. BECKER, ACCOUNTING FOR TASTES 11 (1996) (“The assumption of consistent preferences is clearly not a literal description of much actual behavior . . . but it is an extremely useful simplification of behavior.”). Unlike the large body of evidence supporting the time-inconsistency assumption, there is no systematic evidence finding that people have constant discount rates. See Warren K. Bickel & Matthew W. Johnson, *Delay Discounting: A Fundamental Behavioral Process of Drug Dependence*, in TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE 419, 422 (George Loewenstein et al. eds. 2003) (stating that “[e]xponential discounting . . . has not been empirically supported by behavioral research” conducted in humans and animals).

infusion—venture capitalists increase the likelihood that the entrepreneur will end the search sooner than she would if she had time-consistent preferences. It can also lead to over-entry by under-qualified entrepreneurs and the formation of ventures that have little likelihood of succeeding.<sup>147</sup> This can lead to a distortion in the market for innovations, as experienced workers leave established firms and form start-ups, only to have fragile start-ups fail. Of course, some of the innovations will eventually find themselves back into the hands of established firms.

## 2. *Procrastination Incurring Transaction Costs in Connection with the Contracting Process*

Transacting parties acquire information in order to become aware of transactional hazards so that they can protect themselves via contracts or discounting. An entrepreneur will need to determine how much information to acquire about the talents and experience of the venture capitalist, and whether it is trustworthy or an opportunist. Most types of information are investment goods: a party must incur an immediate cost to search for, acquire, and process the information; however, the benefits from using it materialize over time. This means that time-inconsistent entrepreneurs will have an incentive to procrastinate acquiring information about transactional hazards.<sup>148</sup>

Entrepreneurs will also have an incentive to procrastinate acquiring a second type of information relevant to their decision about whether or not to enter into a transaction with a venture capitalist: self-evaluative information about their own abilities. Self-evaluative information imposes two types of immediate costs, those of acquiring and processing it and the costs associated with learning negative things about one's self. This can lead time-inconsistent entrepreneurs to refuse this sort of information, even

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<sup>147</sup> A party's over optimism regarding the venture's prospects and her own abilities can also lead to over-entry and the formation of nonviable businesses. See Colin Camerer & Dan Lovallo, *Overconfidence and Excess Entry: An Experimental Approach*, 89 AM. ECON. REV. 306, 314–15 (1999) (finding that when entrants believed that their post-entry payoffs would depend on their abilities or skill, they tended to be overoptimistic about their chances of success, as compared to subjects whose payoffs from entry would not depend on skill, leading to over-entry).

<sup>148</sup> O'Donoghue and Rabin argue that since "information gathering itself is likely to be onerous—and create immediate costs—people with self-control problems may be prone to put off incurring these costs." Ted O'Donoghue & Matthew Rabin, *Self Awareness and Self Control*, in TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE 217, 236 (George Loewenstein et al. eds. 2003). The incentive to procrastinate in acquiring information also implies that individuals, in choosing between different types of information to acquire "may be biased towards information that is less onerous to acquire." *Id.* In other words, a party with present-biased preferences will have an incentive to choose the information source that provides the lowest relative immediate cost in return for acquiring the same delayed benefit.

if it were provided to them for free.<sup>149</sup> Procrastination in acquiring self-evaluative information can help explain the empirical studies regarding entrepreneurial overoptimism discussed above.<sup>150</sup> One would expect that time-inconsistent entrepreneurs are more likely to enter into standard venture capital contracts without seeking to amend them. The immediate costs of bargaining over contract provision include the costs acquiring and processing information discussed above, as well as other transaction costs, such as time and effort<sup>151</sup> and legal fees.

### 3. *Procrastination Disclosing Information to Venture Capitalists*

As we have seen, entrepreneurs will have an incentive to delay transferring information to venture capitalists. This problem is exacerbated to the extent that the venture capitalist can impose an immediate punishment on the entrepreneur, and the latter has time-inconsistent preferences. In such a case, even an entrepreneur who, from a long-term perspective, believes that she will be better off transferring the information immediately will have an incentive to procrastinate whenever the immediate penalty is sufficiently great. More generally, the entrepreneur will procrastinate disclosing information to the venture capitalist whenever the immediate costs of doing so are greater than the loss from a one period delay. To the extent that the venture capitalist values the information for reasons other than its use in disciplining the entrepreneur, it can deal with the procrastination problem by agreeing not to use the information against her.

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<sup>149</sup> Economic actors may engage in such “strategic ignorance” aimed at preserving their current levels of self-confidence. Ronald Bénabou & Jean Tirole, *Self-Knowledge and Self-Regulation: An Economic Approach*, in *THE PSYCHOLOGY OF ECONOMIC DECISIONS* 137, 144 (2003). As Baumeister states: “Given the powerful motivation to think well of oneself, it is necessary to ask how people manage to maintain such self-flattering views in the face of mixed and even contrary evidence.” Roy F. Baumeister, *The Self*, in *1 THE HANDBOOK OF SOCIAL PSYCHOLOGY* 680, 690 (Daniel T. Gilbert et al. eds. 1998).

<sup>150</sup> See *infra* Part III.F. (summarizing literature on entrepreneurial overoptimism).

<sup>151</sup> The exertion of effort is one of the most “invisible” but critical immediate costs that leads individuals to procrastinate following through with a task that they have a long-term preference to perform. Effort not only includes physical exertion, but also mental exertion. This means, among other things, that time-inconsistent preferences are an important cause of bounded rationality that has been overlooked by commentators. Individuals who do not face computational limits may nevertheless appear to have bounded rationality because the immediate costs of exerting mental efforts are large enough to cause individuals to repeatedly procrastinate processing the relevant information. Concluding that the failure to fully process information required for making rational decisions is due to mere computational boundaries can lead to mistaken approaches to dealing with the bounded rationality of decisionmakers.

#### 4. *Procrastination by Venture Capitalists in Screening Entrepreneurs*

The venture capital literature places a lot of weight on the rationality of venture capitalists. It is assumed that they act rationally when exercising control over portfolio companies and deploying and enforcing incentive mechanisms. However, venture capitalists with time-inconsistent preferences may procrastinate carrying out these tasks. Moreover, given that identifying potential investments and carrying out the requisite due diligence requires a venture capitalist to incur immediate costs, venture capitalists may under-invest in these activities and thus enter into fewer agreements with start-up companies than would a time-consistent venture capitalist. A venture capitalist may also put off incurring the immediate costs of determining whether an entrepreneur is likely to have the ability to become an effective manager. The managerial skills of entrepreneurs tend to become important at later points in the venture, as the firm grows in size or plans an initial public offering and as we have seen venture capitalists can easily dismiss entrepreneurs who fail to acquire the requisite skills.<sup>152</sup> A venture capitalist may thus procrastinate acquiring this evaluative information about entrepreneurs which in turn can lead to over-entry by entrepreneurs with little managerial abilities.

Certain provisions in the standard limited partnership agreement between a venture capitalist and its investors can be interpreted as commitment devices. For example, the agreement includes a deadline for making investments—three to four years—and harvesting them—six to seven years. Additionally, the investments of the limited partnerships will be in stages; although it is up to the venture capitalist to decide on drawdown requests, it will have to provide sufficient justification to prevent a supermajority of the investors from deciding to replace it with another general partner. Finally, the norm in the venture capital industry of staging investments acts as a commitment device for venture capitalists. While the venture capitalist may have some leeway in deciding when to fund a subsequent stage, it will have one clear-cut deadline: the “burn date” when the venture runs out of funds.

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<sup>152</sup> As we have seen, venture capitalists generally assume that entrepreneurs will be unable to make the transition to capable managers and that they will eventually have to fire entrepreneurs and replace them with professional managers. See Gary E. Willard et al., *In Order to Grow, Must the Founder Go: A Comparison of Performance Between Founder and Non-Founder Managed High-Growth Manufacturing Firms*, 7 J. BUS. VENTURING 181, 182 (1992).

#### IV. ADDRESSING THE MISINCENTIVES IN VENTURE CAPITAL CONTRACTS VIA JUDICIAL ENGINEERING

As we saw in Part II, venture capital contracts are long-term contracts that are by nature incomplete. Courts, therefore, will inevitably be called upon to fill in gaps, interpret vague provisions and provide default rules. This section explores some potential judicial reactions to the types of conflicts that arise in connection with two facets of the relationship between venture capitalists and entrepreneurs: the employer/employee and majority/minority shareholder relationships.

##### A. *Some Remedies For the “Founder’s Disease” Mentality*

One way of dealing with the misincentives created by the “founder’s disease” mentality of venture capitalists is for courts to allow entrepreneurs to use the remedy of dissolution for “oppression” in certain cases, such as when they are fired at a time when the venture is profitable. This default will provide venture capitalists with an incentive to directly address the problem at the time of contracting. In some jurisdictions, such a remedy is already available to entrepreneurs: the violation of a minority shareholder’s “reasonable expectations” to continue in the firm’s employ and as a shareholder constitutes grounds for dissolution due to “oppression” by the majority shareholder.<sup>153</sup>

Courts can also address the problem by narrowly interpreting the “for cause” termination provisions in employment contracts, allowing entrepreneurs greater leeway to bring lawsuits for tortious interference in connection with the firing, and narrowly construing a venture capitalist’s defense of “economic justification.” In *Foster v. Churchill*, the plaintiffs succeeded on their claim that the defendants violated the “for cause” provisions in their contracts (although they lost the case for other reasons).<sup>154</sup> In *Foster*, two founders fired by their firm sued the venture capitalists financing the firm for tortious interference.<sup>155</sup> The founders were fired “for cause,” but the trial court found that none of the reasons given for the firing came under the “for cause” provision of the contract.<sup>156</sup> Thus, the court concluded that the business judgment rule did not protect the venture capitalists, given that they “failed to treat appellants with the utmost good faith required of them” when they prompted the firm to fire them “for cause.”<sup>157</sup> The court did, however, conclude that the venture capitalists were

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<sup>153</sup> See, e.g., *O'Donnel v. Marine Repair Services Inc.*, 530 F. Supp. 1199 (S.D.N.Y. 1982); *In re Kemp & Beatley, Inc.*, 473 N.E.2d 1173 (N.Y. 1984); *In re Topper*, 433 N.Y.S.2d 359 (Sup. Ct. 1980).

<sup>154</sup> 665 N.E.2d 153 (N.Y. 1996).

<sup>155</sup> *Id.*

<sup>156</sup> *Id.*

<sup>157</sup> *Id.*

protected by the defense of economic justification.<sup>158</sup> While such cases will necessarily be fact specific, given the potential for venture capitalist opportunism described above and the resulting repercussions, courts should be wary of claims of firing “for cause” and should construe the defense of “economic justification” narrowly.

B. *Tying the Hands of Venture Capitalists with Well-Tailored Fiduciary Duties: Donahue Meets Sinclair*

Venture capitalists control the venture and thus owe a fiduciary duty to the minority shareholder, the entrepreneur. Notwithstanding Cardozo's "unbending" rhetoric in *Meinhard v. Salmon*, it is quite obvious that fiduciary duties are rigid (in theory), pliable (in application) and vague (in prescription). While this makes planning and anticipation by the parties, in some senses, more difficult, the judge's task more demanding, and the risk of error greater, the imposition of strong fiduciary duties is the best elixir against self-dealing and opportunistic behavior. Having strong fiduciary duties allows the venture capitalist to credibly pre-commit not to act opportunistically—they allow the venture capitalist to tie its hands.<sup>159</sup>

In closed corporations such as the start-ups financed by venture capitalists, the fiduciary duty owed by a majority or controlling shareholder is usually greater than that owed by a majority shareholder in a public corporation. The strength of the fiduciary obligation will vary from jurisdiction-to-jurisdiction. At one end of the spectrum is the strict fiduciary duty set forth in *Donahue v. Rodd Electrotype*.<sup>160</sup> In *Donahue*, the court applied a “strict good faith” standard of loyalty, holding that a closed corporation “bears striking resemblance to a partnership,” and, thus “[j]ust as in a partnership, the relationship among the stockholders must be one of trust, confidence, and absolute loyalty if the enterprise is to succeed.” The court in *Donahue* rested its decision partly on the fact that “[d]isloyalty and self-seeking conduct on the part of any stockholder will engender bickering, corporate stalemates, and perhaps efforts to achieve dissolutions.”<sup>161</sup>

This, of course is a very important concern in venture-capital-financed start-ups since the probability of failure is already high. However, the fact that venture capitalists hold interests in a portfolio of companies means that the fiduciary duty cannot be set too strict. For example, there is a high

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<sup>158</sup> The Appellate Division affirmed, but found that the business judgment rule *did* apply because Delaware law governed. 215 A.D. 155 (N.Y.A.D. 1995). The Court of Appeal affirmed the finding for defendants, holding that the defense of economic justification succeeded, since the firm was in economic distress and the defendants were not motivated by malice or employed illegal. It did not reach the issue of the application of the business judgment rule. *Foster*, 665 N.E.2d 153.

<sup>159</sup> This, of course, will depend on enforcement costs.

<sup>160</sup> 328 N.E.2d 505 (Mass. 1975).

<sup>161</sup> *Id.*



likelihood that some of the companies in a venture capitalist's portfolio are in the same or similar lines of business, and are or may become competitors in the future. This is because venture capitalists tend to specialize in certain industries and geographic areas. Furthermore, a venture capitalist will have to allocate time among the different portfolio companies.

The fiduciary duty rule applicable to majority shareholders in public corporations is more lenient.<sup>162</sup> It distinguishes between situations where both the majority shareholder and the minority shareholders receive a benefit (for example, the payment of a dividend), and situations where the majority receives a benefit that the minority does not receive.<sup>163</sup> In the first situation (the equal-treatment case), courts give the majority shareholder the benefit of the business judgment rule, while in the second situation (discriminatory treatment), courts impose a duty of loyalty. Such a rule, however, is by itself unlikely to be sufficiently restrictive to deter venture capitalist opportunism. In deciding whether to give the venture capitalist the benefit of the business judgment rule (as was done by the New York Supreme Court (Appellate Division), in *Foster*<sup>164</sup>), courts should be sensitive to the contractual hazards faced by entrepreneurs and the ammunition those hazards provide for potential venture capitalist opportunism. Of course, the types of companies and transaction-specific investments involved, and the specific nature of the venture capitalist-entrepreneur relationship need to be taken into account and properly weighed in each case.

## V. CONCLUSION

Venture capital contracts include a number of provisions meant to address the informational asymmetry between venture capitalists and entrepreneurs and deter the latter from acting opportunistically. These contracts give venture capitalists overwhelming ex post bargaining power and thus the ability to act opportunistically, but do not completely extinguish the bargaining power of entrepreneurs. This Article argues that entrepreneurs will have an incentive to use their ex post bargaining power to protect themselves from venture capitalist opportunism and the consequences from the non-opportunistic operation of provisions in venture capital contracts. This self-preserving strategic behavior of entrepreneurs is socially wasteful and at an extreme can lead to the failure of otherwise viable firms. From a social welfare maximizing perspective, the optimal

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<sup>162</sup> See *Donahue*, 328 N.E.2d at 515–16 (drawing a distinction between the fiduciary duty that shareholders in a closed corporation owe each other and the “somewhat less stringent standard of fiduciary duty to which directors and shareholders of all corporations must adhere”).

<sup>163</sup> See *Sinclair v. Levien*, 280 A.2d 717 (Del. 1971).

<sup>164</sup> See *Foster v. Churchill*, 665 N.E.2d 153 (N.Y. 1996). But see trial court opinion in *Foster*—business judgment rule did not apply. *Id.* at 157.

contract would reduce the sum of the welfare losses from venture capitalist opportunism and the self-preserving strategic behavior of entrepreneurs. This Article examines the tradeoff between these two types of socially wasteful behavior and in doing so identifies a number of misincentives created by standard venture capital contracts. The Article also identifies a set of roadblocks to the emergence of optimal venture capital contracts. While venture capital contracts have been studied in great depth, commentators have largely overlooked the set of misincentives and bargaining obstacles identified in this Article.