

2002

Reciprocal Fairness, Strategic Behavior & Venture Survival: A Theory of Venture Capital-Financed Firms

Manuel A. Utset

Florida State University College of Law

Follow this and additional works at: <https://ir.law.fsu.edu/articles>



Part of the [Banking and Finance Law Commons](#), [Business Organizations Law Commons](#), [Contracts Commons](#), and the [Law and Economics Commons](#)

Recommended Citation

Manuel A. Utset, *Reciprocal Fairness, Strategic Behavior & Venture Survival: A Theory of Venture Capital-Financed Firms*, 2002 *Wis. L. Rev.* 45 (2002),

Available at: <https://ir.law.fsu.edu/articles/579>

This Article is brought to you for free and open access by Scholarship Repository. It has been accepted for inclusion in Scholarly Publications by an authorized administrator of Scholarship Repository. For more information, please contact bkaplan@law.fsu.edu.

**RECIPROCAL FAIRNESS, STRATEGIC BEHAVIOR &
VENTURE SURVIVAL: A THEORY OF VENTURE CAPITAL-
FINANCED FIRMS**

MANUEL A. UTSET*

Introduction	48
I. The Agency Theory of Venture Capital Contracts	54
A. Contractual Risks Faced by Venture Capitalists	56
1. Informational Risks	56
2. Risks Related to the Intangible Nature of the Assets in High-Tech Start-Ups	57
3. Contractual Risks Associated with the Uncertainty Surrounding the Innovation Process	58
4. Contractual Risks Due to the General Illiquidity of Venture Capital Investments.....	58
B. Institutions Adopted to Deal with Contractual Risks.....	59
1. Giving Control over the Start-Up to the Venture Capitalist.....	61
2. Incentive-Based Mechanisms	63
3. Venture Capitalist Control over Exit Mechanisms	68
II. Original Expectations and Coordinating Ongoing Cooperation in Business Ventures.....	68
A. Coordination and Cooperation within Ventures.....	70
1. Agreeing to the Original Bargain: Expectations and Focal Points	71
2. Coordination Among Firm Participants: An Ongoing	

* Associate Professor, Boston University School of Law. B.S.F.S., 1984, Georgetown University; J.D., 1987, University of Michigan Law School. Earlier versions of this Article were delivered at the Law and Economics Conference, the American Association of Law Schools Conference, and faculty workshops at the University of California-Berkeley, Boalt Hall School of Law, Hofstra University School of Law, Northeastern University School of Law, Northwestern University School of Law, University of Cincinnati School of Law, University of San Diego School of Law, University of Utah College of Law, and University of Wisconsin Law School. I would like to thank participants in all those events for their kind comments. I would also like to thank Joseph Brodley, Daniela Caruso, Allison Dussias, Melvin Eisenberg, Alan Feld, Neil Hecht, Keith Hylton, Chris Kimball, Arthur F. Koskinas, Richard McAdams, Peter Mennel, Robert Merges, Michael Meurer, Dean Daniel Rodriguez, Maureen O'Rourke, David Seipp, Howard Shelanski, Emily Sherwin, Avi Soifer, and Luisa Utset. Last and most particularly, I would like to thank Hugh Baxter and Diane Koskinas.

Organizational Concern.....	73
3. Venture Capital-Financed Start-Ups as Heuristic-Intensive Firms	76
4. Summary.....	78
B. Original Expectations and Venture Capital Scripts: Framing the Terms of the Bargain	79
1. Coordination and Original Expectations	80
2. Of “Scripts”	88
3. Venture Capital Scripts and Entrepreneurial Expectations	90
4. Summary.....	91
C. The “Founder’s Disease” Script: Divergent Expectations About the Entrepreneur’s Tenure with the Venture	92
1. Venture Capitalists’ Expectations and Beliefs: The “Founder’s Disease”	92
2. Entrepreneurs’ Expectations and Beliefs: Long Term Employment in the Venture.....	94
D. Divergent Expectations over the Roles and Relative Power of the Parties	96
1. Venture Capitalist Beliefs and Expectations: The Employer-Employee Relationship	96
2. Entrepreneurial Beliefs and Expectations: The Co-Adventurer Relationship.....	97
3. Summary.....	100
E. Divergent Original Expectations and Entrepreneurial Over-Optimism: An Exacerbating Factor.....	100
1. General Evidence of Over-Optimism.....	101
2. Overconfidence and Under-Investment by Entrepreneurs in Information Searches	103
III. From Comfy Chair to Inquisition: The Realization by the Entrepreneur of Her Divergent Original Expectations.....	105
A. Effects of Entrepreneurial Over-Optimism: Contracting, Living, Learning	106
B. Learning by Being Done to: From Innocent Application of High-Powered Incentives to Venture Capitalist Opportunism	108
1. Non-Opportunistic Triggers: Becoming Cognizant of Her Divergent Original Expectations	108
2. Entrepreneurial Learning Motivated by Venture Capitalist Opportunism	108
IV. Ex Post Bargaining Inefficiencies: From Coordination to Prisoner’s Dilemma to Retaliation.....	113
A. Incomplete Firm Contracts and Ex Post Venture Capitalist-	

Entrepreneurial Bargaining	114
B. From Coordination Game to a Prisoner’s Dilemma.....	118
C. Reciprocity: Expectations, Fairness, and Retaliation	119
1. Voluntary Provisions of Public Goods	121
2. Reciprocal Motivations: The Context and Expectations of Fairness.....	122
3. Reciprocating Against Perceived Unfairness	123
4. Conclusion.....	128
V. Strategic Self-Preserving and Retaliatory Responses by Entrepreneurs	128
A. The Innovator’s Dilemma.....	130
B. The Informational Hold-Up Problem.....	132
1. Entrepreneur’s Interest in Entrenching Herself: Protection Against the Innovator’s Dilemma Hazard.....	133
2. Entrepreneur’s Interest in Influencing Monitoring	136
3. Entrepreneur’s Interest in Saving Information for Future Use	137
4. Entrepreneur’s Interest in Pure Retaliation	138
C. To Innovate or to Manage: The Dual-Task Agency Problem.....	138
1. The Dual Task Problem	139
2. Consequences of the Dual Task Problem	141
D. The Costs of Staged Financing.....	142
E. The Costs Associated with the Failure of Otherwise Viable Ventures.....	143
VI. Normative and Doctrinal Implications	146
A. The Potential Benefits of Reducing Divergent Original Expectations of Entrepreneurs.....	148
1. Centrifugal and Centripetal Organizational Forces Affected by Divergent Original Expectations	148
2. Better Allocation of Resources Associated with Financing Innovation Projects.....	149
3. Other Costs Associated with the Allocation of Entrepreneurial Human Capital	150
B. Disclosure Requirement as a Means for Reducing Divergent Original Expectations.....	151
1. Reducing Divergent Expectations by “Decomposing” Complexity	152
2. Reducing Divergent Expectations Through the Proactive Actions of Venture Capitalists.....	154
3. Disclosing to Over-Optimistic Entrepreneurs: Several Mechanisms for Getting Information Through to Over-Optimistic Parties.....	161

C. Reactions of Entrepreneurs to the Reduction of Divergent Expectations.....	163
1. Foregoing a Transaction with a Venture Capitalist.....	164
2. Waiting Can Provide a Valuable Call Option to Entrepreneurs	164
3. Entering into a Transaction with a Venture Capitalist While Being Aware of Contractual Risk	165
VII. Conclusion	166

Capt. Renault: "The waters? What waters? We're in the desert!"

Rick Blaine: "I was misinformed."¹

And his brain has been mismanaged with great skill.²

INTRODUCTION

Venture capitalists serve as a major source of capital for young, risky firms³ with high growth prospects, primarily high-technology firms such as those in the computer, biotechnology, or telecommunications business.⁴ They identify, nurture, package, and

1. CASABLANCA (Warner Bros. 1942).

2. BOB DYLAN, *A License to Kill*, on INFIDELS (Special Rider Music 1983).

3. See PAUL A. GOMPERS & JOSH LERNER, *THE VENTURE CAPITAL CYCLE* 3 (1999) (discussing the high level of risk associated with venture capital investments); Raphael Amit et al., *Entrepreneurial Ability, Venture Investments, and Risk Sharing*, 36 MGMT. SCI. 1232 (1990); William A. Sahlman, *The Structure and Governance of Venture-Capital Organizations*, 27 J. FIN. ECON. 473, 506 (1990) (finding in a study of venture capital investments between 1980 and 1988, that 34.5% of the capital invested by firms in the survey resulted in a loss). I will use the terms "firm," "venture," "company," and "corporation" interchangeably, unless the context otherwise requires. By the time that venture capitalists get involved, the venture will usually be organized as a corporation, in part because it gives the parties greater flexibility in devising the capital structure and more certainty on how courts will interpret different contracts and securities—as opposed, for example, to newer types of firms, like limited liability companies. See Joseph Bankman, *The Structure of Silicon Valley Start-Ups*, 41 UCLA L. REV. 1737, 1739-40 (1994) (showing that Silicon Valley firms are primarily organized as corporations rather than partnerships).

4. In 1999, more than 90% of venture capital investments were in technology-based companies. Loren Fox, *VCs Love the Internet*, UPSIDE, May 2000, at 43 (reporting the findings of a PricewaterhouseCoopers Money Tree survey); see also GOMPERS & LERNER, *supra* note 3, at 12-13 (including empirical data showing that venture capital investments are concentrated in information technology companies—

eventually sell these start-up firms, either through an initial public offering or a private sale to a third party. Between March 2000 and March 2001, the NASDAQ Composite lost more than fifty-five percent of its value;⁵ more than four trillion dollars in stock market wealth disappeared.⁶ Thus, it is not surprising that, in the period between January 2000 and June 2001, more than 550 Internet companies went out of business.⁷ This notwithstanding, on the front cover of the March 5, 2001 issue of *Fortune Magazine*, Bill Gross [the founder and CEO of Idealab] looks straight at the camera with a confident, inviting smile, countered by the headline: "I lost \$800 million in eight months. Why am I still smiling?"⁸

In contrast, the front cover of the Spring 2001 issue of *AI Magazine* has a photograph of the late Herbert Simon with a more restrained half smile—underneath, simply, "Herbert A. Simon 1916-2001." Simon, a computer scientist and one of the pioneers in the field of artificial intelligence, spent a large part of his illustrious career studying the psychology and economics of human decision-making,⁹ in part, as a

computer, communications, and electronics—and in health care companies); John Freear & William E. Wetzel, Jr., *Who Bankrolls High-Tech Entrepreneurs?*, 5 J. BUS. VENTURING 77 (1990).

5. Andy Serwer, *It Was My Party—I Can Cry If I Want To*, FORTUNE, Mar. 19, 2001, at 203. During this period, 10% of the stocks listed on the NASDAQ lost more than 90% of their value. *Id.*; see also Robert Kowalski, *The Specter of Nasdaq Delisting Haunts Dot-Coms*, THESTREET.COM (Oct. 30, 2000), at <http://www.thestreet.com/tech/internet/1145719.html>.

6. See Daniel Kadlec, *Zap! True, A Lot of Our Stock-Market Wealth is Getting Vaporized in Front of Our Eyes, But How Bad It Gets Still Depends on How Spooked We Get*, TIME, Mar. 26, 2001, at 26. Between the end of 1997 and March 2001, investors paid \$52 billion to buy shares in 585 high-tech IPOs—the same amount spent on twice as many IPOs between 1989 and 1997. *Id.*

7. *Mid-Year Report: Internet Shutdowns Appear to Reach Plateau*, WEBMergers.COM (June 2001), at <http://www.webmergers.com/editorial/article.php?id=37> [hereinafter *Mid-Year Report*]. These shutdowns were distributed among the following sectors: 10% Internet access companies, 27% content providers, 46% E-commerce companies, 12% infrastructure providers, and 6% professional service providers. *Id.* Regionally, 32% of the companies were in California, 9% in New York, and 6% in Massachusetts. *Id.*

8. Joseph Nocera, *Why Is He Still Smiling? Bill Gross Blew Through \$800 Million in 8 Months (and He's Got Nothing to Show for It)*, FORTUNE, Mar. 5, 2001, at 70.

9. Simon won the Nobel Prize in Economics in 1978 "for his pioneering research into the decision-making process within economic organizations." Press Release, The Sveriges Riksbank (Bank of Sweden) Prize in Economic Sciences in Memory of Alfred Nobel, Studies of Decision-making Lead to Prize in Economics, at <http://www.nobel.se/economics/laureates/1978/press.html> (Oct. 16, 1978).

prelude to designing “smart” machines. Simon focused on the way that humans solve problems and translated the essentials into a language understood by machines. He then took the insights he learned in instructing machines to reason to gain a deeper understanding of our brain’s bounded computational abilities, our “bounded rationality.”

Transaction cost economics and the growing literature applying behavioral psychology to legal issues makes use of Simon’s work on bounded rationality and the “satisficing” behavior economic actors engage in when transacting in complex environments.¹⁰ Herbert Simon’s research underscores the difficulties involved in “managing brains,” whether human or artificial, given bounded computational resources; Bill Gross’s smile reminds us, in Voltaire’s words, that “not all men were meant to innovate,” and, yes, that not all entrepreneurs are meant to be financed—in short, that brains, too, can be “mismanaged with great skill.”¹¹

Now that we are post-bubble, one would expect that the parties involved in the venture capital process—i.e., investors in venture capitalist funds,¹² venture capitalists, entrepreneurs, lawyers, judges, and regulators—will look back at the way that the market for innovation-intensive start-ups evolved over the last few years and try to identify what worked and what did not, as well as at how the institutional frameworks used in the venture capital process can be changed to reflect this new learning.¹³

10. Simon’s work in this area starts with the “observation that human thinking powers are very modest when compared with the complexities of the environments in which human beings live.” HERBERT A. SIMON, 1 MODELS OF THOUGHT 3 (1979).

11. If we were not so familiar with the “best” and “worst of times” with which Dickens opens *A Tale of Two Cities*, we may innocently believe that Dickens’s first paragraph described instead the Manichean tensions of the Internet Revolution:

[I]t was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way—in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only.

CHARLES DICKENS, *A TALE OF TWO CITIES* 1 (Andrew Sanders ed., Oxford Univ. Press 1988) (1859).

12. I will refer to investors in venture capital funds as *investors*. While the venture capitalists running those funds are also investors in the start-up firms, I will refer to them simply as *venture capitalists*. The innovation-intensive start-ups being financed will be referred to as *start-ups* or *portfolio companies*, or simply, the *venture*.

13. Undoubtedly, some will claim that the capital markets and the market for

To address these issues it is useful to isolate three factors that will affect the actions taken by parties in any long-term venture, such as that between a venture capitalist and an entrepreneur: (1) the extent to which each party has mistaken beliefs about the nature of the transaction; (2) the ability of each party to freely maneuver during the venture, i.e., to take actions that negatively affect the other party; and (3) the ability of each party to exit the venture. The venture capital literature has primarily focused on how venture capitalists structure transactions paying close heed to these three factors. For example, venture capitalists know that they may have mistaken beliefs regarding the viability of the innovation or the abilities of the entrepreneur. Moreover, venture capitalists recognize that an entrepreneur's knowledge and skills—her human capital—will be critical to the venture until the innovation is finished, but will not be as valuable during the marketing and production stages. At those latter stages, the venture will be best run by an individual with well-developed managerial skills.

As a result, venture capitalists structure transactions so as to retain control. Among other things, control gives venture capitalists the ability to freely maneuver during the venture, including the ability to dismiss entrepreneurs when their services are no longer deemed valuable—e.g., entrepreneurs whose managerial skills are sub-par compared to those of professional managers. In addition to retaining control, venture capitalists adopt mechanisms to reduce their costs of exiting the venture and mechanisms that make it very costly for entrepreneurs to exit. Entrepreneurial exit is penalized whether the exit is voluntary or at the hands of the venture capitalist. For example, a fired entrepreneur will lose access to her innovation, will be subject to restrictions on competing employment, and under certain instances will even lose all or part of her equity in the venture.

The existing venture capital literature has analyzed the effects of mistaken beliefs, maneuverability during the venture, and the ability to exit from the point of view of venture capitalists. This Article takes the

contract provisions worked just fine, and that there are no questions that need asking. As the evidence in the first paragraph of this Article illustrates, there are important reasons why we may question any claim that the capital markets acted efficiently vis-à-vis high-tech companies. Admittedly, the market did work properly, when, as of June 2001, it had weeded out 555 Internet companies for lack of profitability. However, this is only half of the story. See *Mid-Year Report*, *supra* note 7. The real question is not whether unprofitable firms failed, but why they existed to begin with. This involves asking why the private equity markets, led by venture capitalists, allocated so much capital to firms that never had a chance of becoming profitable, and why the public equity markets valued these unproven start-ups at such high multiples.

opposite tack, analyzing the effects of these three factors from the point of view of entrepreneurs. This allows us to bring to the foreground the following three facts that generally hold when an entrepreneur transacts with a venture capitalist: (1) at the time of contracting, the entrepreneur will tend to have substantial mistaken beliefs, a fact that she will recognize as she interacts with the venture capitalist and as onerous provisions in venture capital contracts are triggered; (2) the entrepreneur has the ability to freely maneuver during the venture, given that her human capital is critical to the success of the venture; and (3) there is a *high penalty attached to entrepreneurial exit*, whether the exit is voluntary or involuntary.

The principal argument of this Article is that when these three factors are present, an entrepreneur will have an incentive to engage in two types of costly strategic behavior: self-preserving strategic behavior and "retaliation." In other words, one would expect that an entrepreneur, upon learning of her mistaken beliefs, will try to identify and quantify unforeseen contractual risks and, given the high penalty for exit, will opt to stay in the venture. She will then use her ability to maneuver to take strategic actions aimed, at the very least, at reducing these risks. These strategic actions will produce deadweight costs to the venture—i.e., costs associated with the redistribution and not the creation of wealth. In short, an entrepreneur's mistaken initial beliefs will cast a long, and costly, shadow over the rest of the venture. The prior venture capital literature has not focused on the role of entrepreneurial mistaken beliefs and its relation to the high exit penalty, and has, therefore, not properly accounted for the attendant strategic riposte.

Generally, high-tech start-ups are more fragile than established firms, due, in part, to the volatility of the environment in which these start-ups operate, the uncertainties surrounding the innovation process, and the fact that a large proportion of start-up assets are intangible. The deadweight costs and other side effects associated with the two types of entrepreneurial strategic behavior discussed in this Article can help shed some light on the question of why so many high-tech start-ups failed. Therefore, one goal of this Article is to focus attention on the centripetal institutional forces that can keep fragile cooperative ventures together and the centrifugal ones that can tear them apart.

There are three principal reasons why entrepreneurs are particularly vulnerable to having mistaken beliefs at the time of contracting. First, numerous studies have shown that entrepreneurs are exceedingly over-optimistic, a trait that will cloud their ability to properly gather and evaluate the evidence needed to construct unbiased beliefs. Secondly, entrepreneurs rarely have prior experience with venture capital

transactions. This lack of experience coupled with the great complexity of venture capital transactions increases the probability of mistaken beliefs. Third, since venture capitalists are repeat players they have a repository of knowledge that they can use to help frame and construct an entrepreneur's beliefs in a self-serving manner. For example, as we will see below, a major source of entrepreneurial mistaken beliefs is the information provided in the venture capitalists' promotional literature.

The two types of strategic behavior this Article studies are self-preserving strategic behavior and "retaliation." An entrepreneur takes self-preserving strategic actions in order to reduce unforeseen contractual risks. She will do so when the expected monetary benefits from reducing those risks exceed the expected costs of the actions. Under the retaliation scenario, an entrepreneur acts strategically even when expected monetary returns are negative. The behavioral psychology literature on reciprocal fairness shows that individuals facing high exit costs may choose not to exit unfair transactions, choosing instead to remedy the unfairness by retaliating against the other party. While retaliation may produce negative monetary returns, the act of retaliating against perceived unfairness provides positive non-monetary utility. In conclusion, entrepreneurs have incentives to engage in strategic behavior—whether self-preserving or retaliatory—under a variety of circumstances, some of which will appear irrational, if one were not to account for an entrepreneur's concern with reciprocal fairness.

To reduce these two types of strategic behavior one must try to change one or more of the three motivating factors: an entrepreneur's mistaken beliefs, her ability to freely maneuver, and the high penalty attached to exit. As discussed in the Article, the high penalty for entrepreneurial exit is due to legitimate venture capitalist concerns and is therefore hard to change. In addition, entrepreneurial maneuverability is hard to curtail until after the entrepreneur's human capital loses its institutional value. This leaves entrepreneurial mistaken beliefs as the only factor that can be significantly changed. Venture capitalists, as repeat players, are in a possession of important information regarding the transaction that can help reduce the level of entrepreneurial mistaken beliefs. Therefore, this article argues that venture capitalists should be provided with a clear legal incentive to disclose, at the time of contracting, the sort of information needed to address the most common types of entrepreneurial mistaken beliefs.

This disclosure should allow entrepreneurs to make better informed decisions of how to allocate their human capital. For example, some potential entrepreneurs will choose to remain with their current employer or in school, while others will choose to delay seeking venture

capital funds until the innovation is further along.¹⁴ In the end, disclosure alone is not a cure-all. Among other things, over-optimism may lead some entrepreneurs to disregard the proffered disclosure. As will be shown below, however, the benefits associated with a rule requiring venture capitalist disclosure exceed the costs.¹⁵

Part I of the Article discusses venture capital literature and describes the transactional context. Part II introduces the coordination problems faced by organizations and discusses how these coordination problems are exacerbated by the volatility of the environments in which high-tech start-ups operate. It then turns to the issue of entrepreneurial mistaken beliefs. Finally, it sets forth the empirical evidence on entrepreneurial over-optimism. Part III discusses the various triggers that can lead an entrepreneur to become cognizant of her mistaken beliefs. Part IV begins by examining how the intangible nature of start-up assets provides entrepreneurs with the ability to maneuver during the venture. It then shows that as an entrepreneur becomes cognizant of her mistaken beliefs, the coordination game with the venture capitalists can be transformed into a prisoner's dilemma. It ends by setting forth the reciprocal fairness and retaliation model. Part V introduces what I refer to as the *innovator's dilemma*: while an entrepreneur knows that it is beneficial for the venture if she quickly disburses to others within the organization her innovation-intensive knowledge, she also knows that the faster that she transfers that knowledge, the faster that she will become expendable. It then discusses three types of strategic actions available to an entrepreneur to deal with the innovator's dilemma. It finishes by discussing the costs associated with the failure of otherwise viable start-up ventures. Part VI sets forth various normative and doctrinal implications of the analysis in the rest of the Article. Part VII concludes.

I. THE AGENCY THEORY OF VENTURE CAPITAL CONTRACTS

Investments in innovation-intensive start-ups are particularly risky, given uncertainties surrounding the innovation process, and potential

14. An entrepreneur's decision to transact with a venture capitalist is highly irreversible due to the high exit penalty; therefore, waiting provides an entrepreneur with a valuable call option.

15. Among the potential costs is that disclosure will lead some entrepreneurs with socially valuable innovations to abandon the innovation process. However, this is only a problem if the entrepreneur decides not to salvage at least part of that value by selling the right to the innovation to the third party.

opportunistic behavior and managerial incompetence on the part of the entrepreneur. Venture capitalists and entrepreneurs enter into a set of highly standardized contracts aimed at reducing the contractual risks faced by venture capitalists. I will use the phrase *venture capital contracts* to refer to this set of highly standardized written contracts.¹⁶

Over the years, scholars studying the venture capital process have made a variety of theoretical claims about venture capital contracts using an agency theory approach. 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.¹⁷ One would expect that a bona fide, self-interested agent, such as an entrepreneur, would take self-serving actions at the expense of her principal, the venture capitalist. Agency theory provides important insights into the costs of such self-serving actions.

As monitoring costs—that is, informational costs—increase, an agent will be less constrained, allowing her greater freedom to take actions detrimental to the principal.¹⁸ Financing innovation-intensive firms involves numerous informational problems, making the theoretical agency literature a natural starting point. With few exceptions,¹⁹ this literature, following the agency paradigm, has focused on the screening and monitoring difficulties faced by venture capitalists. In keeping with the agency paradigm, the venture capitalist's informational disadvantage

16. Venture capital contracts are mostly non-negotiable. There are some provisions, however, that are negotiated (usually the entrepreneur's compensation package—when she will get it and how much she will get). The fact that most provisions are non-negotiable does not necessarily mean that the contracts will not maximize the return to both parties. What is important is whether the entrepreneur is wealth-constrained and unable to bribe the venture capitalist to take actions to maximize joint returns. See OLIVER HART, *FIRMS, CONTRACTS, AND FINANCIAL STRUCTURE* 97-99 (1995). The fact that entrepreneurs choose to raise capital from a venture capitalist betrays a finding that they are wealth-constrained because they tend to turn to venture capitalists as a last resort given the onerous provisions in venture capital contracts and the high rate of return required by venture capitalists. Darwin V. Neher, *Staged Financing: An Agency Perspective*, 66 *REV. ECON. STUD.* 255, 255 (1999) (discussing the fact that entrepreneurs generally face liquidity constraints).

17. See, e.g., Joseph E. Stiglitz, *Principal and Agent*, in *THE NEW PALGRAVE: ALLOCATION, INFORMATION AND MARKETS* 241, 241-42 (John Eatwell et al. eds., 1989).

18. See PAUL MILGROM & JOHN ROBERTS, *ECONOMICS, ORGANIZATION AND MANAGEMENT* 254-56 (1992).

19. See, e.g., Thomas Hellmann & Manju Puri, *Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence*, 57 *J. FIN.* 169, 171 (2002) (arguing that while the venture capitalist's monitoring function has received great attention, the venture capitalist's role "in building of new companies" has not received much attention).

vis-à-vis the entrepreneur and the potential for entrepreneurial opportunism are given a central role.²⁰ Accordingly, this literature focuses on the role of venture capital contracts in reducing venture capitalists' risks arising from informational asymmetries and entrepreneurial opportunism.

A. Contractual Risks Faced by Venture Capitalists

1. INFORMATIONAL RISKS

It is fair to assume that at the time of contracting, an entrepreneur has superior information vis-à-vis the venture capitalist regarding the innovation and whether she is a hard worker with the required managerial skills to run the venture. Therefore, before investing in a start-up, a venture capitalist will acquire information about the innovation, such as how feasible and marketable it is, as well as information about the entrepreneur—whether she is the real thing or just a crank, honest or a thief, hard-working or taken to leisure.²¹

During the life of the venture, informational asymmetries continue to be a source of risk to the venture capitalist.²² A venture capitalist is

20. See generally Yuk-Shee Chan et al., *Learning, Corporate Control and Performance Requirements in Venture Capital Contracts*, 31 INT'L ECON. REV. 365, 366 (1990); Tyzoon T. Tyebjee & Albert V. Bruno, *A Model of Venture Capitalist Investment Activity*, 30 MGMT. SCI. 1051 (1984) [hereinafter Tyebjee & Bruno, *Model of Venture Capitalist*]; Tyzoon T. Tyebjee & Albert V. Bruno, *Negotiating Venture Capital Financing*, 29 CAL. MGMT. REV. 45 (1986). But see Gillian K. Hadfield, *Problematic Relations: Franchising and the Law of Incomplete Contracts*, 42 STAN. L. REV. 927 (1990) (discussing opportunism in franchising contracts and emphasizing the importance of looking at relationships such as franchising from both the point of view of the party that has the most ex post bargaining power as well as from the point of view of the other party to the transaction).

21. The problems arising out of pre-contractual informational asymmetry are usually referred to as "adverse selection" problems. See George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488, 493 (1970). See generally MILGROM & ROBERTS, *supra* note 18, at 149-59. The key is for the "good" entrepreneurs (e.g., those who are hard working and truthful) to be able to credibly communicate or signal to venture capitalists that they are in fact "good" entrepreneurs. To achieve this, they have to be able to send a signal that cannot be mimicked by "bad" entrepreneurs. See Amit et al., *supra* note 3 (setting forth an adverse selection model in the context of venture capital financing).

22. These post-contractual informational problems are referred to as "moral hazard" problems. See MILGROM & ROBERTS, *supra* note 18, at 166-67. At the time of valuation and contracting, a principal will, to the extent possible, try to factor in potential moral hazard problems.

not involved in the day-to-day managing of the venture and will not have first-hand knowledge of how much time and effort the entrepreneur is dedicating to the venture.²³ This is typical of the delegation implicit in any agency relationship.²⁴ However, the informational problems in high-tech start-ups are exacerbated by the fact that managerial decision-making requires more than general managerial skills; it also requires an ability to understand, verify, and apply technical information necessary for the managerial decision-making process. The entrepreneur, in managing the venture, will not only have greater access to information related to the ongoing development of the innovation, but will also have a better ability to judge and use that information since she will generally have superior technical knowledge.

2. RISKS RELATED TO THE INTANGIBLE NATURE OF THE ASSETS IN HIGH-TECH START-UPS

The principal assets of high-tech start-ups, such as the entrepreneur's know-how (her human capital) and intellectual property (e.g., patents and trade secrets), are highly intangible in nature. Firms whose principal assets are intangible are riskier to finance than those with tangible assets, such as manufacturing equipment, since investors can always recuperate some of their investment by selling those tangible assets. Intangible assets like intellectual property are harder to value and sell to third parties.

Reliance on the entrepreneur's human capital exposes a venture capitalist to a "hold-up" risk: after the venture capitalist makes its investment, the entrepreneur can threaten to quit the venture (taking her human capital) unless the venture capitalist agrees to "renegotiate" the bargain to give the entrepreneur a larger portion of the venture's surplus.²⁵ For example, assume that a venture capitalist invests one million dollars with an entrepreneur to finance the development and marketing of a new drug. This investment is, to some degree, irreversible since it is venture-specific; the venture capitalist will receive less than one million dollars if the entrepreneur quits without developing

23. See GOMPERS & LERNER, *supra* note 3, at 130-31.

24. See MILGROM & ROBERTS, *supra* note 18, at 179.

25. See HART, *supra* note 16, at 56-58 (discussing the role of the ownership of tangible assets in helping reduce the hold-up risks posed by an employee threatening to quit a venture). On the hold-up risk generally, see Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297, 302 (1978).

the drug. Since the value of the venture capitalist's investment depends, in large part, on the entrepreneur remaining in the venture, the entrepreneur has some ability to act opportunistically.

Of course, the venture capitalist will be able to anticipate this behavior and will require some assurances that the entrepreneur will not threaten to quit the venture. However, the venture capitalist's inability to force an entrepreneur to perform against her will means that some other governance mechanisms are needed, such as non-compete agreements or other penalties for exiting the firm inappropriately.

3. CONTRACTUAL RISKS ASSOCIATED WITH THE UNCERTAINTY SURROUNDING THE INNOVATION PROCESS

There is a large degree of uncertainty surrounding the financing of high-tech start-ups.²⁶ This uncertainty is due to a number of factors, including unknowns surrounding the technical viability and market potential of the innovation, the potential for new competitors, as well as the inherent uncertainties surrounding any new venture.²⁷ Moreover, contracting for innovations and enforcing those contracts is made more difficult by the inherent novelty of innovations, which in some instances may require the development of new ways of perceiving, processing, transferring, and referring to information.

4. CONTRACTUAL RISKS DUE TO THE GENERAL ILLIQUIDITY OF VENTURE CAPITAL INVESTMENTS

The relative illiquidity of the venture capitalist's investment produces another contractual risk. As in most close corporations, the venture capitalist's ability to exit by selling its shares is limited.²⁸ This illiquidity is due to the absence, prior to an initial public offering, of a public market in which the venture capitalist can sell its shares.²⁹ From the venture capitalist's perspective, the illiquidity problem is exacerbated by the fact that when a venture capitalist attempts to sell its shares it

26. See GOMPERS & LERNER, *supra* note 3, at 127 (stating that young companies bringing new products to market are inherently associated with high levels of uncertainty).

27. See Bengt Holmstrom, *Agency Costs and Innovation*, 12 J. ECON. BEHAV. & ORG. 305, 309 (1989).

28. See I F. HODGE O'NEAL & ROBERT B. THOMPSON, O'NEAL'S CLOSE CORPORATIONS § 1.08 (3d ed. 1997 & Supp. 2000) (listing the illiquidity of shares as one of the principal characteristics of close corporations).

29. *Id.*

may inadvertently signal to potential buyers that there are undisclosed problems with the venture.³⁰ This is because a venture capitalist is in a better position to know about the prospect of the venture. Therefore a potential buyer faces the same informational asymmetry problems discussed above in connection with a venture capitalist's initial investment in the venture.³¹

B. Institutions Adopted to Deal with Contractual Risks

In this Section, I describe the principal contractual mechanisms used by venture capitalists to address the four contractual risks described in the prior Section. The agency literature on venture capital contracts describes venture capital contracts as a reaction to these contractual risks. There are two textbook reactions to contractual risks: discounting for the risk and adopting governance structures.³²

30. See GOMPERS & LERNER, *supra* note 3, at 188 (discussing how syndication of venture capital investments is in part a reaction to the adverse selection problem); Anat R. Admati & Paul Pfleiderer, *Robust Financial Contracting and the Role of Venture Capitalists*, 49 J. FIN. 371 (1994) (discussing the adverse selection problems involved when venture capitalists try to attract new investors). See generally Stewart C. Myers & Nicholas Majluf, *Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have*, 13 J. FIN. ECON. 187, 188 (1984).

31. Given this informational problem, potential investors will find it difficult to distinguish between bad investments and good investments and will accordingly discount their offering price. Venture capitalists holding good investments whose values are greater than the discounted price will then pull them and refuse to sell them. A new round of discounting will follow to account for this pullout, and so on. In other words, a classic adverse selection problem is created. Good venture capitalists can try to separate themselves from bad ones by taking actions that are too expensive or unfeasible for bad venture capitalists to take. This will allow potential investors to distinguish between them. As always, reputational bonds may develop among repeat players. This is a market where the number of sellers and buyers is small, and thus reputation may be a constraint. See, e.g., Admati & Pfleiderer, *supra* note 30, at 387.

32. For a discussion of the use of discounting for transactional risk—here, in the form of requiring higher returns—and of governance structures to deal with various types of transactional hazards, see OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* 32-35 (1985) [hereinafter WILLIAMSON, *ECONOMIC INSTITUTIONS*]. A party who can act opportunistically during the life of the venture may choose the discounting option—i.e., he may choose to do nothing and receive a smaller return from the transaction—or he can agree to governance structures that tie his hands in some manner, thereby reducing his ability to act opportunistically during the life of the transaction. *Id.* The canonical treatment from the agency perspective is attributable to Jensen and Meckling. See Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure*, 3 J. FIN. ECON. 305 (1976). Although there is significant overlap between both the agency and transaction costs approaches, for a discussion of some of the principal differences, see

In view of these risks, standard venture capital contracts encompass four principal goals. The first goal is to provide venture capitalists with very high rates of return—usually a ten-fold return of capital over a five-year period.³³ The second goal is to give *control* of the start-up firm to the venture capitalist.³⁴ By retaining control over the venture, venture capitalists can change the “rules of the game” and interpret ambiguous rules instead of requiring the intervention of third parties, such as courts or arbitrators. The third goal is to provide a set of high-powered *incentive mechanisms*³⁵ aimed at increasing entrepreneurial effort and reducing opportunistic behavior. The final goal is to provide *exit mechanisms* for venture capitalists.³⁶

OLIVER E. WILLIAMSON, *Corporate Finance and Corporate Governance*, in THE MECHANISMS OF GOVERNANCE 171, 171-79 (1996) [hereinafter WILLIAMSON, MECHANISMS OF GOVERNANCE].

33. This is equivalent to a loan with a 58% compounded interest rate. Bob Zider, *How Venture Capital Works*, HARV. BUS. REV., Nov.-Dec. 1998, at 131, 135. In addition, a venture capitalist reduces part of its risk by diversifying—investing in many different portfolio companies at one time. See GOMPERS & LERNER, *supra* note 3, at 190 (discussing the incentive of venture capitalists to diversify their holdings).

34. See Thomas Hellmann, *The Allocation of Control Rights in Venture Capital Contracts*, 29 RAND J. ECON. 57 (1998) (discussing the literature regarding venture capitalist control rights over the start-up ventures that they finance); Sahlman, *supra* note 3, at 506 (arguing that venture capitalists “structure their investments so they can keep firm control”).

35. By *incentive mechanisms*, I mean any type of mechanism, contractual or otherwise, imposed by an individual (a “principal”) on another (an “agent”) to induce the agent to act in a certain way. Incentives are usually meant to maximize an agent’s effort, but due to informational asymmetries, the principal will not be able to observe effort levels. Thus, the principal will base its compensation decisions on observed output levels which are a function of *both* effort and a random variable. As a result, high effort may not necessarily lead to high compensation. Thus, an agency contract will trade off incentives against transferring more risk to a risk-averse agent. The more risk that is transferred, the higher the potential return to the agent, but also the higher the potential negative outcome—i.e., the *higher-powered* the incentive. See generally MILGROM & ROBERTS, *supra* note 18, at 149-61. For an argument why most firms adopt low-powered incentives, see WILLIAMSON, *ECONOMIC INSTITUTIONS*, *supra* note 32 (arguing that high-powered incentives within firms can lead economic actors to take strategic behavior detrimental to the firm).

36. See Sahlman, *supra* note 3, at 506 (arguing that venture capitalists structure their investments to keep control over the venture, adopt compensation schemes that provide “appropriate incentives” to entrepreneurs, and adopt exit mechanisms to increase the liquidity of their investments).

1. GIVING CONTROL OVER THE START-UP TO THE VENTURE CAPITALIST

The contractual sources of venture capitalist control are (1) the preferred stock purchase agreement, (2) the terms of the preferred stock, (3) the stockholders' agreement, and (4) employment agreements. By controlling the venture, a venture capitalist can keep a "tight leash" on entrepreneurs, thereby reducing their ability to act opportunistically.³⁷ Control allows greater access to information needed to monitor entrepreneurs and provides venture capitalists with various mechanisms to discipline errant entrepreneurs, including the ability to fire or demote a managing entrepreneur with little difficulty (other than meeting the provisions of the employment agreement).³⁸

A venture capitalist's control over a start-up's board of directors is a critical source of its governance powers.³⁹ Venture capitalists in most instances negotiate to get outright control of the board.⁴⁰ Although the

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

38. As we will see below in greater detail, there is ample empirical evidence showing that venture capitalists have little reluctance to fire entrepreneurs. See *infra* Part II.C.1.

39. See Hellmann, *supra* note 34, at 58 (stating that venture capitalists "hold effective control over the board, typically through a voting majority, and sometimes through explicit contractual agreements"); Joseph Rosenstein et al., *The CEO, Venture Capitalists, and the Board*, 8 J. BUS. VENTURING 99, 111 (empirical study showing that the "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").

40. See Joseph Rosenstein et al., *How Much Do CEOs Value the Advice of Venture Capitalists on Their Boards?*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 238, 240 (1990) (empirical study showing that where the top twenty venture capital firms are represented on the board, "venture capitalists have over 50% of the seats in 60% of the 30 firms, as compared with only 23% in the 68 firms where the top 20 [venture capital firms] are not involved"). In a minority of cases where firms are already far along in the development and marketing process at the time of investment, a venture capitalist may make direct control over the board contingent upon the triggering of some pre-set benchmark (e.g., the failure to achieve a certain profit level or the violation of an affirmative or negative covenant in the preferred stock agreement). See Josh Lerner, *Venture Capitalists and the Oversight of Private Firms*, 50 J. FIN. 301, 308-10 (1995). Lerner discussed an empirical study of 271 biotechnology firms financed by venture capitalists between 1978 and 1989, finding that the number of venture capitalist board members increases between financing rounds after CEO turnovers (an average increase of 1.75 venture capitalists, as opposed to 0.24 venture capitalists when the CEO was not replaced), and also finding that in the first through fourth rounds of financing, the mean number of board members (1) who were venture capitalists was 1.40, 1.87, 2.09, and 2.12, respectively; (2) who were insiders was 1.28, 1.40, 1.61,

board does not usually run the day-to-day affairs of a company, it is vested with the ultimate power and responsibility of managing the corporation.⁴¹ It selects the officers who will actually manage the corporation (including, in our case, the entrepreneur), sets their salaries, and replaces them when necessary.

Additionally, the stock purchase agreement and stockholders' agreement will contain affirmative and negative covenants, whereby the entrepreneur agrees to take certain actions or to forego taking certain actions, respectively. For example, an entrepreneur may agree to certain affirmative covenants, such as giving the venture capitalist financial statements as well as other types of information. Moreover, an entrepreneur will typically be prohibited from amending the certificate of incorporation, changing the nature of the business, entering into self-dealing transactions, making unauthorized dividend payments, entering into a merger agreement, and selling all or substantially all of its assets.⁴²

and 1.73, respectively; (3) who were outsiders (either other investors or individuals with no other relation with the firm) was 0.86, 0.86, 1.02, and 1.27, respectively; and (4) who were quasi-insiders (those "who do not work directly for the firm, but who have an ongoing relationship" with it) was 0.52, 0.56, 0.67, and 0.54, respectively. *Id.* Nevertheless, empirical evidence shows that, as a general rule, where venture capitalists do not have direct control over the board, they retain de facto control over the board and the venture. See, e.g., Joseph Rosenstein et al., *Do Venture Capitalists on Boards of Portfolio Companies Add Value Besides Money?*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 216, 218, 220 (1989) (empirical study of high-technology portfolio companies in northern California, the Boston area, and north and central Texas, concluding that the size of boards averaged 5.62 members; insider management, 1.70 members; venture capital principals, 2.40 members; venture capital staff, 1.16 members; and others, 1.85 members).

41. For example, Delaware corporation law provides: "The business and affairs of every corporation organized under this chapter shall be managed by or under the direction of a board of directors . . ." DEL. CODE ANN. tit. 8, § 141(a) (1991). Analogous provisions are found in every other state. Some states have adopted close corporation statutes that allow shareholders to choose to dispose with the board of directors and manage the corporation directly. See generally Dennis S. Karjala, *An Analysis of Close Corporation Legislation in the United States*, 21 ARIZ. ST. L.J. 663 (1989).

42. These are similar to the type of covenants usually found in debt agreements. If a venture capitalist is making a debt rather than a preferred stock investment, it will usually ask for some additional debt-related covenants. These include certain financial covenants, limitations on incurring future indebtedness, and restrictions on liens and encumbrances.

2. INCENTIVE-BASED MECHANISMS

Venture capital contracts adopt a variety of incentive mechanisms aimed at better aligning the interests of the entrepreneur with those of the venture capitalist. A principal goal of these incentive mechanisms is to provide an impetus to entrepreneurs to exert the right amount of effort and to dissuade them from acting opportunistically. Under venture capital contracts, the entrepreneur will contribute to the venture her capital, intellectual property, labor, and expertise needed to develop, manufacture, and market the innovation. In return, the entrepreneur retains some of the venture's equity with the expectation that it will provide her with a high rate of return if the venture were to be successful. The higher the intensity of the incentive mechanisms deployed, the greater will be the amount of the venture's risk that is transferred from the venture capitalist to the entrepreneur.

a. Compensation Schemes as High-Powered Incentives

Venture capitalists use compensation schemes to provide entrepreneurs with an incentive to exert the right amount of effort.⁴³ If a venture capitalist could adequately observe and quantify the effort level of the entrepreneur (and it knew the optimal effort level to be taken), it could then base the entrepreneur's compensation on the amount of effort exerted.⁴⁴ However, a venture capitalist cannot fully observe entrepreneurial effort. As a result, an entrepreneur's compensation must be tied to an observable metric, such as the venture's performance, that can act as a proxy for entrepreneurial effort.⁴⁵ Stock options can play

43. See GOMPERS & LERNER, *supra* note 3, at 131 (describing the use of stock options to align the interests of venture capitalists and entrepreneurs).

44. See MILGROM & ROBERTS, *supra* note 18, at 214-15 (describing the general problem of designing an incentive contract when a principal cannot fully observe the agent's level of effort). Two problems make such an approach virtually impossible: (1) the entrepreneur has private information about her effort level (this would be the case when the outcome is observable by the parties but not verifiable by third parties and therefore virtually impossible to enforce in a court of law); and (2) the outcome of the venture is a function not only of effort level, but also of random events. Therefore, bad outcomes may occur even when the entrepreneur's effort level has been high—i.e., it may result from a random event. If one could separate how much of the bad outcome was due to the random event, this problem would disappear. *Id.* at 215 (describing the fact that the output produced will be a function of both the effort exerted by the agent and some outside shock or random variable).

45. *Id.* However, the compensation scheme must provide enough incentives to the entrepreneur to exert the right amount of effort, without transferring so much of the

such a role and, thus, comprise a large part of the compensation package.⁴⁶

Generally, entrepreneurs are paid a salary that is below market with the expectation that the bulk of their compensation will come from appreciation of their base equity holdings and be supplemented by stock options awarded during the venture.⁴⁷ The stock options will vest over a period of years, heavily weighed towards the back end. If an entrepreneur leaves the company or is fired (for cause) before the shares have vested, she loses her right to exercise the options.

b. Staged Financing

Unlike banks, which will often disburse borrowed funds in a single tranche,⁴⁸ venture capitalists disburse funds over time, in succeeding stages.⁴⁹ By staging investments and not pre-committing to financing future stages, venture capitalists, in essence, create a series of call options. At the time each stage arrives, the venture capitalist will decide—given the current valuation—whether to continue investing in

risk to her that she opts not to transact with the venture capitalist. According to agency theory, an entrepreneur will transact with a venture capitalist only if her expected returns exceed the returns she can receive elsewhere—i.e., if it is greater than her reservation price. The venture capitalist knows that in order to get the entrepreneur's participation in the venture, the entrepreneur's returns must be at least equal to her reservation price. Ideally, the venture capitalist wants to provide expected returns to the entrepreneur that meet the entrepreneur's reservation price, but which also give an incentive to the entrepreneur to maximize the returns to the venture capitalist. See generally Stiglitz, *supra* note 17, at 245-46.

46. See GOMPERS & LERNER, *supra* note 3, at 131.

47. Many entrepreneurs create their own ventures after having left higher paying jobs in more established companies. Entrepreneurs may be persuaded to put up with these compensation schemes, in part because they tend to give short-term priority to getting the business up and running and getting the innovation out to market; they, of course, expect to receive high payoffs sometime in the future. Venture capitalists may be motivated to adopt such an incentive scheme not only to control entrepreneurs' behavior, but also because a new venture will usually have limited cash flow, and will not expect profits until later in its development.

48. Of course, this is true for seasoned investors with ample ability to repay the loan. In some cases, particularly in secured financing of inventory, banks will make disbursements in stages just like in the venture capital context. See, e.g., U.C.C. § 9-204 (1999).

49. The alternative of contributing or committing to contribute all of the capital in a lump sum investment has been discussed in the literature, but staged financing is favored for its usefulness as a high-powered incentive. See Gompers, *supra* note 37, at 1461; Neher, *supra* note 16; Sahlman, *supra* note 3, at 506.

the project or to dissolve the company and salvage what it can.⁵⁰ In a sense, staged financing gives venture capitalists an “option to abandon.”⁵¹

According to the venture capital literature, the principal function of staged financing is to reduce the amount of a venture capitalist’s investment that is put in jeopardy by an entrepreneur’s threat to quit the venture.⁵² Staged financing also helps reduce a venture capitalist’s informational hazard by allowing it to acquire information about the entrepreneur and the innovation before putting too much of its capital at risk.⁵³

Several academic observers of the industry have argued that staged financing is the most effective control mechanism available to a venture capitalist.⁵⁴ A venture capitalist can discipline an entrepreneur by

50. Before agreeing to invest in an additional stage, the venture capitalist will carefully evaluate the firm to see if it should (1) invest more money, or (2) liquidate or sell the firm. Thus, staged financing provides the venture capitalist with a powerful—but indirect—control mechanism.

51. See William A. Sahlman, *Aspects of Financial Contracting in Venture Capital*, 27 J. APPLIED CORP. FIN. 23, 29-31 (1988). The option to abandon is valuable because an important component of any investment decision is timing. The uncertainties surrounding investments can be alleviated by acquiring information (at a price, of course). Potential investors can economize merely by waiting, given that once the future arrives, what were uncertainties before become reality. Whether the investor waits will depend on whether the potential investment will still be available in the future, or whether, for any other reason, the benefits of acting now exceed those of waiting. For a discussion of the interrelation between uncertainty, irreversibility of investment, and timing, see AVINASH K. DIXIT & ROBERT S. PYNDICK, *INVESTMENT UNDER UNCERTAINTY* 6-7 (1994).

52. For a discussion of the hold-up hazard see *supra* note 25 and accompanying text. Over time, the venture may acquire assets that will have salvage value, thus vitiating the force of the entrepreneur’s threats and reducing the liquidity hazard. See Gompers, *supra* note 37; Neher, *supra* note 16, at 256.

53. On the acquisition of information during the life of the venture, see generally Admati & Pfleiderer, *supra* note 30, at 372; Chan et al., *supra* note 20; Gompers, *supra* note 37, at 1463-64. As mentioned above, during the life of the venture, the entrepreneur will have private information about such things as the viability of the project and how hard the entrepreneur is working. A venture capitalist can thus update its information and re-value its investment at different periods, refusing to continue to finance the venture if the re-valued firm is providing sub-par returns. For the problems with this type of informational updating, see Henry Hansmann & Reinier Kraakman, *Hands-Tying Contracts: Book Publishing, Venture Capital Financing, and Secured Debt*, 8 J.L. ECON. & ORG. 628 (1992).

54. See, e.g., Gompers, *supra* note 37, at 1462 (arguing that the “role of staged capital 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”); Sahlman, *supra* note 3, at 506 (arguing that “[t]he most important mechanism for

threatening not to fund any more stages of the project. The ability to credibly threaten to liquidate the firm at the time of negotiating over a stage gives the venture capitalist bargaining leverage.⁵⁵ To increase their leverage, venture capitalists often delay their funding until close to the date when the venture's working capital is completely exhausted—what is referred to in the industry as the “burn date.” A venture capitalist's leverage is further strengthened by contract provisions giving it a monopoly over future financing.⁵⁶ Moreover, even if a venture capitalist allows an entrepreneur to seek additional outside funding, the very refusal by a venture capitalist to provide that additional funding will send negative signals to other potential financiers, making it harder for the entrepreneur to convince third parties to invest in the venture.

c. Power Exerted over the Entrepreneur's Equity Stake

The employment agreement usually provides that if the entrepreneur leaves the venture, she has to, at the option of the venture capitalist, sell back at book value (rather than current market value) any

controlling the venture is staging the infusion of capital”).

55. Venture capitalists sometimes liquidate firms even if they are producing a profit, if the growth opportunity and the prospect for cashing out the investment are not high enough (what they call “the living dead”). Thus, in some cases they will be able to make credible threats to liquidate even profitable firms. See John C. Ruhnka et al., *The “Living Dead” Phenomenon in Venture Capital Investments*, 7 J. BUS. VENTURING 137 (1992). Whether this mechanism is effective depends on whether the venture capitalist's threat is credible. A threat is “credible” if, when analyzed from the point of view of when the threat would have to be carried out (i.e., quit or stay), the person who made the threat would actually be better off by carrying out the threat. Where the threat is not credible, the entrepreneur will view it as vacuous and disregard it. This does not mean that sometimes the person making the non-credible threat will not follow through with it. It just means that if one assumes that they are trying to maximize their expected utility, they will not follow through with the non-credible threats. Things may be different, however, if the parties are interacting repeatedly over a period of time and one party is trying to establish a reputation for toughness. See DREW FUDENBERG & JEAN TIROLE, *GAME THEORY* 145 (1991); THOMAS C. SCHELLING, *THE STRATEGY OF CONFLICT* 13-15 (1960).

56. 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 V. Bruno et al., *Patterns of Failure Among Silicon Valley High Technology Firms*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 677, 689 (1986). This sort of monopoly is not uncommon in debt financing: the rationale in the debt and venture capital contexts is that giving a financier a property right over future financings will encourage him to search out investment possibilities. This is one of the rationales behind allowing after-acquired and future financing clauses in secured financing contexts. See U.C.C. § 9-204.

stock she owns.⁵⁷ Upon exiting the venture, an entrepreneur will also lose any stock that had been allocated to her—through options, for example—but that had not yet vested. Additionally, the stockholders' agreement will restrict the ability of the entrepreneur to sell her shares.⁵⁸

Venture capitalists make their capital contribution through convertible preferred stock.⁵⁹ Like all convertible securities, the preferred stock will have provisions to protect against dilution, in case of stock splits, or issuances of common stock at a lower price than the conversion price.⁶⁰ Anti-dilution provisions adjust the conversion price to the price of new shares offered or rights issued. A type of anti-dilution provision often used by venture capitalists is the ratchet-down anti-dilution provision. Such a provision mandates that if even *one* share is sold at a lower price, the conversion price of *all* the venture capitalist's preferred stock is adjusted.⁶¹ Once triggered, anti-dilution provisions can wipe out all or most of an entrepreneur's equity stake. Anti-dilution provisions can be used opportunistically, particularly given that the venture capitalist controls the infusion of new capital and the board of directors (which sets the issuance price).⁶²

57. Sometimes a more generous formula is used, but like in all closed corporations, valuation of shares is very difficult. On the difficulties of valuing shares in close corporations, see generally Zenichi Shishido, *The Fair Value of Minority Stock in Closely Held Corporations*, 62 *FORDHAM L. REV.* 65 (1993).

58. The entrepreneur (and other key managers) will generally be prohibited from selling shares to third parties without giving the venture capitalist a right of first refusal to the shares. See JOSEPH W. BARTLETT, *VENTURE CAPITAL: LAW, BUSINESS STRATEGIES, AND INVESTMENT PLANNING* 205-06 (1988). In many cases, the entrepreneur will also be prohibited from selling shares to third parties unless the venture capitalist can also sell its stake; this type of provision is meant to deal with the threat of entrepreneur exit. *Id.* at 186. Taken together, these two provisions essentially prevent the entrepreneur from selling shares unless the venture capitalist approves.

59. Preferred stock is preferable to debt for a number of reasons: it provides more flexibility since default is not an issue, it allows for control of the enterprise, and the convertibility feature is much easier. On the general advantages of using convertible preferred stock in the venture capital context, see Sahlman, *supra* note 3, at 509-10. The stock is convertible to common stock for sale in an IPO or to a third party. On convertible securities, see *DEL. CODE ANN.* tit. 8, § 151(e) (1991).

60. On the anti-dilution provisions for convertible stock purchased by venture capitalists, see BARTLETT, *supra* note 58, § 9.4, at 173-78.

61. A less punishing type of provision is a weighted average anti-dilution provision which takes into account how many shares are issued. *Id.* at 176-77.

62. Through their ability to control when and how the certificate of incorporation is amended, and their control of the board of directors, venture capitalists control the authorization and issuance of new shares. As is the case in all states (except where close corporation statutes are applicable), the "business and affairs of every corporation . . . shall be managed by or under the direction of a board of directors ." *DEL. CODE ANN.*

d. Providing Disincentives for Entrepreneur Exit from the Venture

A venture capitalist can increase the entrepreneur's cost of exit by having her sign a non-disclosure agreement. This agreement, which is standard in these transactions, prohibits an entrepreneur from disclosing trade secrets to third parties and requires her to disclose and transfer to the venture any invention or other innovation developed while she was still with the venture. An entrepreneur may also be required to sign an agreement promising not to compete directly with the venture. Although non-compete agreements may be hard to enforce in court, a well-drafted non-disclosure agreement can achieve many of the same results. The entrepreneur's value to other employers (or even as a single proprietor) is significantly reduced by these agreements given the threat of lengthy and expensive litigation. For example, a new employer can be sued for stealing trade secrets, for interfering with an agency relation under agency law, or for tortious interference with a contract.

3. VENTURE CAPITALIST CONTROL OVER EXIT MECHANISMS

Venture capital contracts give venture capitalists the ability to liquidate the venture or to sell it through a private sale or initial public offering. Venture capital contracts achieve this through three principal mechanisms: (1) a registration rights agreement, which usually requires that the venture file a registration statement with the Securities and Exchange Commission in order to effectuate an initial public offering; (2) the venture capitalist's voting control over the company's equity and control over the board of directors; and (3) redemption rights—that is, a "put" that forces the venture to buy back the venture capitalist's preferred stock (of course, this is of little use if there are no assets to pay for the redemption). Control over these exit strategies will help alleviate the venture capitalist's liquidity hazard.

II. ORIGINAL EXPECTATIONS AND COORDINATING ONGOING COOPERATION IN BUSINESS VENTURES

The agency literature on venture capital contracts takes the traditional approach in economics (as well as law and economics) of positing actors who behave according to a rational choice model. Under the rational choice model, an economic actor has a stable, well-defined

set of preferences, and the actor chooses her actions to maximize those preferences.⁶³ The model is simple, powerful, and in many instances predictive, but it is, like any model, one of various possible abstractions from reality. Shortly after von Neumann and Morgenstern set forth their expected utility model,⁶⁴ psychologists began to gather experimental data showing that individuals tend to violate some of the expected utility axioms.⁶⁵

Ironically, another of von Neumann's important contributions eventually helped frame a further challenge to the rational actor model.⁶⁶ It was a short step from the von Neumann computer—a computer architecture comprising memory and a microprocessor—to the computer/brain analogy,⁶⁷ and from there, to Herbert Simon's conclusion that, like computers, human minds face computational constraints. As a result, individuals often deviate from the idealized rational choice model by resorting to rules of thumb, heuristics,⁶⁸ and by satisficing, instead of fully computing and using all of the information available to them. As Simon says, economic man is "a satisficer, a person who accepts 'good enough' alternatives, not because he prefers less to more but because he has no choice."⁶⁹

63. Under the model, a decision-maker faced with uncertainty will, in theory, compute her subjective probability and her degree of belief about various propositions, and apply those probabilities to make a rational choice. Moreover, as time goes by and she gains new information, she will update her subjective probabilities using Bayes Rule.

64. See John von Neumann & Oskar Morgenstern, *THEORY OF GAMES AND ECONOMIC BEHAVIOR* (1944).

65. For a literature review, see John D. Hey, *Experiments and the Economics of Individual Decision Making Under Risk and Uncertainty*, in *ADVANCES IN ECONOMICS AND ECONOMETRICS: THEORY AND APPLICATIONS: SEVENTH WORLD CONGRESS* 173 (David M. Kreps & Kenneth F. Wallis eds., 1997).

66. There were many more, from foundational set theory (helping side-step Russell's paradox) to the Manhattan Project. See generally NORMAN MACRAE, JOHN VON NEUMANN (1992).

67. See JOHN VON NEUMANN, *THE COMPUTER AND THE BRAIN* (1958).

68. See generally Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, in *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* 3 (Daniel Kahneman et al. eds., 1982).

69. HERBERT A. SIMON, *THE SCIENCES OF THE ARTIFICIAL* 36 (2d ed. 1981). There may be evolutionary reasons why we have evolved into heuristic beings as opposed to purely rational ones. No one wants to be like the overly rational Buridian ass that found itself exactly in the middle of two equally attractive piles of hay, and, having no reason to choose one side over the other, it failed to decide and starved. On the Buridian ass problem, see Edna Ullmann-Margalit & Sidney Morgenbesser, *Picking and Choosing*, 44 *SOC. RES.* 757 (1977). On some evolutionary rationales for our use of heuristics, see Michael Waldman, *Systematic Errors and the Theory of Natural Selection*, 84 *AM. ECON. REV.* 482, 483 (1994).

The work of behavioral psychologists has shown that the cognitive interface through which we get our sensory inputs, our information, and the cognitive rules that we deploy to process and use that information affect the decision-making process. It would be much tidier if we were hard-wired with well-defined (and efficient) algorithms, but we are not. Instead of algorithms we use heuristics; we economize in processing information. Cognitive psychologists view our reliance on rules of thumb and heuristics, not as a limitation to some baseline human rationality, but as an important factor in our ability to perceive, attend, and remember.⁷⁰

A. *Coordination and Cooperation within Ventures*

One thing that the behavioral psychology literature has taught us is that context matters. Judgments are made against backgrounds that are at times ambiguous, uncertain, and vague, and at others, constructed and arbitrary. Our beliefs and expectations, however constructed, shape our preferences and thus shape our decisions.⁷¹

The notion of “expectations” is prevalent in many different academic literatures, including cognitive psychology, artificial intelligence, linguistics, sociology, and economics; although they each use the term in slightly different ways—for example, expectations,⁷²

70. In the realm of decision-making, our reliance on heuristics is not always with momentous consequence. The pioneering work of Daniel Kahneman and Amos Tversky has provided a framework by which we can systematically explore how decision-making guided by heuristics can sometimes lead to systematic errors. Their work, as well as those who have followed their lead, has shown that, while on average it makes good sense—i.e., it is rational—for decision-makers to rely on heuristics, such an approach can lead to systematic errors and deviations from “rationality” that are not random, but can be predicted. See Tversky & Kahneman, *supra* note 68, at 3. For further discussions of this point, see Giovanni Dosi & Dan Lovallo, *Rational Entrepreneurs or Optimistic Martyrs? Some Considerations on Technological Regimes, Corporate Entries, and the Evolutionary Role of Decision Biases*, in TECHNOLOGICAL INNOVATION: OVERSIGHTS AND FORESIGHTS 41, 42-43 (Raghu Garud et al. eds., 1997); Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1477-78 (1998).

71. See, e.g., Amos Tversky & Daniel Kahneman, *Rational Choice and the Framing of Decisions*, in DECISION MAKING: DESCRIPTIVE, NORMATIVE, AND PRESCRIPTIVE INTERACTIONS 167, 172 (David E. Bell et al. eds., 1988) (stating that “framing” is affected, among other things, by the “norms, habits, and expectancies of the decision maker”).

72. For a thorough discussion on the important role played by “expectations” as an ordering device, see Deborah Tannen, *What’s in a Frame? Surface Evidence for Underlying Expectations*, in FRAMING IN DISCOURSE 14, 14-21 (Deborah Tannen ed.,

frames,⁷³ scripts,⁷⁴ and schemas.⁷⁵ Ross refers to one's "structure of expectations" as the way individuals organize knowledge about the world and use that knowledge to process new information, events, and experiences.⁷⁶ In short, "expectations" allow individuals to face familiar events and occurrences without having to re-invent the wheel.⁷⁷

Expectations are particularly important when individuals interact with each other in social contexts. Expectations allow individuals to communicate, to "talk," allowing them to make sense of each other and avoid misunderstandings.⁷⁸ Among other things, expectations, when they intersect, in whole or in part, allow parties to coordinate their behavior and take joint actions.

1. AGREEING TO THE ORIGINAL BARGAIN: EXPECTATIONS AND FOCAL POINTS

A key problem in forming a business venture is how to coordinate cooperation in order to reach the original bargain. The general focus of the coordination literature has been on the mechanics for *creating* cooperation and solving the coordination problem—that is, finding a way to have the expectations of the cooperating parties meet or intersect in

1993).

73. See, e.g., ERVIN G. GOFFMAN, *FRAME ANALYSIS* 10-11 (1974) (using the word "frame" to study "the organization of experience;" the definition of situations as they are "built up in accordance with principles of organization which govern events—at least social ones—and our subjective involvement in them").

74. See generally ROGER C. SCHANK & ROBERT P. ABELSON, *SCRIPTS, PLANS, GOALS AND UNDERSTANDING: AN INQUIRY INTO HUMAN KNOWLEDGE STRUCTURES* (1977).

75. See, e.g., FREDERICK C. BARTLETT, *REMEMBERING: A STUDY IN EXPERIMENTAL AND SOCIAL PSYCHOLOGY* 75 (1932) (this classic work coined the term "schemas" to describe how individuals, in memory tests, introduced aspects of their own knowledge or experience of the world to help them remember).

76. Tannen, *supra* note 72, at 16 (discussing Robert N. Ross, *Ellipsis and the Structure of Expectations*, 1 *OCCASIONAL PAPERS IN LINGUISTICS* 183 (1975)). Individuals approach the world "as experienced and sophisticated veterans of perception who have stored their prior experiences as 'an organized mass,' and who see events and objects in the world in relation to each other and in relation to their prior experience." *Id.* at 20-21. As J. L. Austin pointed out: "Conjurers, too, trade on this. 'Will some gentleman kindly satisfy himself that this is a perfectly ordinary hat?' This leaves us baffled and uneasy: sheepishly we agree that it seems all right, while conscious that we have not the least idea what to guard against." See J. L. AUSTIN, *Other Minds*, in *PHILOSOPHICAL PAPERS* 76, 87 n.1 (J. O. Urmson & G. J. Warnock, eds., 3d ed. 1979).

77. See Tannen, *supra* note 72, at 21.

78. See GOFFMAN, *supra* note 73, at 496-99 (discussing the role of "frames" in facilitating communication, dealing with ambiguities, and avoiding misunderstandings).

some meaningful way.⁷⁹ In the paradigmatic coordination scenario, according to Schelling, a couple becomes separated in a department store without any prior agreement where they would re-meet.⁸⁰ Since they cannot communicate, they must try to ascertain what the other party will do.⁸¹ Schelling suggests that in order for the couple to find each other they must be able to:

[C]oordinate predictions, to read the same message in the common situation, to identify the one course of action that their expectations of each other can converge on. They must 'mutually recognize' some unique signal that coordinates their expectations of each other.⁸²

The key is to find these clues, a focal point, where their expectations intersect. To that end, the focal point must have "some kind of prominence or conspicuousness."⁸³

Unlike pure coordination games, parties trying to reach a contractual bargain will communicate. It is not the lack of communication that creates the coordination problem, rather, the problem arises because, in trying to reach a bargain, the parties' expectations as to the nature and consequences of that bargain must intersect in some fashion and be mutually recognized by the parties. However, in trying to agree how to divide the bargaining surplus, the parties may literally talk past each other and fail to reach a bargain.⁸⁴

79. See DAVID HUME, A TREATISE OF HUMAN NATURE 489-90 (L. A. Selby-Bigge ed., 1978); DAVID K. LEWIS, CONVENTION: A PHILOSOPHICAL STUDY 24-36 (1969); SCHELLING, *supra* note 55, at 54.

80. See SCHELLING, *supra* note 55, at 54.

81. *Id.* In the formal game theoretic treatment of the coordination game, where for example, a couple is deciding whether to go to a football game or the ballet, but cannot agree ahead of time, there exist multiple Nash equilibriums and there is no real way of choosing between them. For a formal discussion of the coordination game, see FUDENBERG & TIROLE, *supra* note 56, at 18-20; see also RUSSELL W. COOPER, COORDINATION GAMES: COMPLEMENTARITIES AND MACROECONOMICS viii-xiii (1999).

82. SCHELLING, *supra* note 56, at 54.

83. *Id.* at 57.

84. As Schelling argues, what epitomizes a bargaining situation is the interrelationship of conflict and the mutual interdependence of the parties. *Id.* at 86-87. In general, a bargaining context is one in which two or more parties negotiate with each other regarding the possibility of cooperating in some venture. Cooperation will allow them to produce a joint good, a *surplus*. The parties, of course, need to decide how to divide the surplus. See MARTIN J. OSBORNE & ARIEL RUBINSTEIN, BARGAINING AND MARKETS (1990); John C. Harsanyi, *Bargaining*, in THE NEW PALGRAVE: GAME THEORY 54 (John Eatwell et al. eds., 1989); John F. Nash, Jr., *The Bargaining Problem*, 18

2. COORDINATION AMONG FIRM PARTICIPANTS: AN ONGOING ORGANIZATIONAL CONCERN

A key problem during the life of a business venture is how to continue to coordinate cooperation, given the original bargain and the original expectations of the parties, in a world of changed circumstances.⁸⁵ Herbert Simon's work underscores the inherent difficulties in coordinating *ongoing* cooperative behavior in organizations, particularly those operating in complex environments.⁸⁶ Ongoing cooperation in complex environments requires "coordination," the process of *informing* each participant of the activities planned by the other participants.⁸⁷ As Simon states: "In cooperative systems, even

ECONOMETRICA 155, 155 (1950). In some instances, a joint good will not get produced because the parties cannot agree on how to share it. In other words, whether a bargaining surplus is produced at all is contingent on the ability of the parties to reach an agreement on how to divide that surplus. See Robert Cooter, *The Cost of Coase*, 11 J. LEGAL STUD. 1, 17 (1982); see also STEVEN J. BRAMS, NEGOTIATION GAMES: APPLYING GAME THEORY TO BARGAINING AND ARBITRATION 29 (1990) ("The *bargaining problem* concerns how to get players in a conflict to reach an agreement that is in their mutual interest when it is in each player's individual interest to hold out for as favorable a settlement as possible.").

85. See, e.g., CHESTER I. BARNARD, THE FUNCTIONS OF THE EXECUTIVE 4 (1938) (arguing that "[f]ormal organization is that kind of cooperation among men that is conscious, deliberate, purposeful"); R. H. COASE, *The Nature of the Firm*, ECONOMICA, Nov. 1937, at 4, reprinted in THE FIRM THE MARKET AND THE LAW 33, 35-36 (1988) (arguing that within the firm, market mechanisms are replaced by an "entrepreneur-coordinator" who makes production decisions); HERBERT A. SIMON, ADMINISTRATIVE BEHAVIOR 72 (3d ed. 1976) (stating that "cooperation will usually be ineffective—will not reach its goal, whatever the intentions of the participants—in the absence of coordination"); WILLIAMSON, ECONOMIC INSTITUTIONS, *supra* note 32, at 13 (arguing that the firm is best characterized as a governance structure instead of a production function).

86. SIMON, *supra* note 85, at 72-73.

87. *Id.* at 72. The issue of the difficulties and costs associated with transferring information within firms and in markets—the problem of coordination—was one that was of particular concern to scholars writing around 1945, the date of Simon's first edition of *Administrative Behavior*. The debate was, in particular, motivated by broader discussions between advocates of centralized coordination and advocates of market coordination. See generally OSKAR LANGE & FRED M. TAYLOR, ON THE ECONOMIC THEORY OF SOCIALISM (Benjamin E. Lippincott ed., 1938) (arguing for coordination through centralized, planned economies); F. A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519 (1945) (arguing that the dispersed knowledge and information of atomistic actors does not require centralized planning since the information is, in essence, encapsulated in the "prices" that emerge in competitive markets). In fact, Simon interprets Hayek's concern with coordination through market mechanisms as a way for atomistic economic actors to conserve information, allowing

though all participants are agreed on the objectives to be attained, they cannot ordinarily be left to themselves in selecting the strategies that will lead to these objectives."⁸⁸ Thus, a critical role of an administrative system (of the organization) is to help coordinate the production, processing, and dissemination of information and knowledge necessary for decision-making within that organization.⁸⁹ As we will see, high-

them "to behave rationally with relatively simple computations and on the basis of relatively little information." HERBERT SIMON, *ECONOMICS, BOUNDED RATIONALITY AND THE COGNITIVE REVOLUTION* 27 (1992). In short, markets "make it possible for people of bounded rationality to make reasonable choices." *Id.* Berle and Means made an interesting foray into this debate. They compared the "subjection of the economic interests of the individual to those of a group," exemplified by the separation of ownership and control in large corporations to the centralized control in communist systems. ADOLF A. BERLE & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* 245 (rev. ed. 1968) (1932). As they stated: "[I]t still remains true that the corporation director who would subordinate the interests of the individual stockholder to those of the group more nearly resembles the communist in mode of thought than he does the protagonist of private property." *Id.*

88. SIMON, *supra* note 85, at 73. Simon saw computers as eventually playing a critical role in this process. In fact, in the early 1960s, in a lecture entitled "Will the Corporation Be Managed By Machines?", Simon predicted "that we will have the technical capability, by 1985, to manage corporations by machine," although humans will continue to play an important role, given that machines will be constrained by their relative inability to see and move. HERBERT A. SIMON, *THE SHAPE OF AUTOMATION: FOR MEN AND MANAGEMENT* 49 (1965). I point this out not so much to show that in this instance the Turing test has not been met, but to emphasize Simon's influential conception of the role of artificial intelligence—namely, that the study of computational processes provides helpful insights into myriad non-computational areas. After all, when Alan Turing coined the term *computer* to refer to the human beings whose job it was to compute numbers, the physical computer had not yet been conceived. See A. M. Turing, *On Computable Numbers, With an Application to the Entscheidungsproblem*, 42 *PROC. LONDON MATHEMATICAL SOC'Y* 230 (1937). On the Turing test, see A. M. Turing, *Computing Machinery and Intelligence*, 59 *MIND* 433 (1950).

89. In addition to the early treatments by Barnard, Simon, Polanyi, and von Mises, the issue of the production and dissemination of information within organizations has received close attention in the transaction cost, agency, and property rights literatures. See KENNETH ARROW, *THE LIMITS OF ORGANIZATION* 53-59 (1974) (discussing the role of information channels and communication codes within organizations); BARNARD, *supra* note 85, at 90 & n.5 (discussing, among other things, norm-like communications that he labeled communication through "observational feeling"—decisions in some small groups "arrived at, and acted upon without having ever been formulated by anybody"); HAROLD DEMSETZ, *The Theory of the Firm Revisited*, in *OWNERSHIP, CONTROL, AND THE FIRM* 144 (1988) (discussing the property rights approach to the production and distribution of knowledge within firms); MICHAEL POLANYI, *PERSONAL KNOWLEDGE: TOWARDS A POST-CRITICAL PHILOSOPHY* 52 (1958) (discussing the concept of tacit or personal knowledge—things that we may know but find impossible to completely and effectively communicate to others); SIMON, *supra* note 85; LUDWIG VON MISES, *HUMAN ACTION: A TREATISE ON ECONOMICS* (1949); OLIVER E.

technology start-ups are information intensive. As a result, control over the production and dissemination of that information will be an important source of organizational power.

Like Simon, both Chester Barnard⁹⁰ and Oliver Williamson⁹¹ (influenced in part by Barnard's treatment) have underlined the fact that the "intertemporal realities of organization"⁹² cannot be ignored, since doing so can produce unintended and costly side effects.⁹³ In short, organizations will need to "adapt" as they face fluctuating, complex environments. In fact, Williamson argues that "adaptation [is] the central problem of organization."⁹⁴ However, while Williamson acknowledges the issue of potential inefficiencies associated with intertemporal aspects of organizations, he concludes that, over time, those inefficiencies will be identified and appropriate organizational changes made.⁹⁵ Barnard, on the other hand, is more pessimistic,

WILLIAMSON, *MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS* 31-33 (1975) (discussing "information impactedness," i.e., "when true underlying circumstances relevant to the transaction . . . are known to one or more parties but cannot be costlessly discerned by or displayed for others" given uncertainty, opportunism, and bounded rationality); Michael C. Jensen & William H. Meckling, *Specific and General Knowledge, and Organizational Structure*, in *CONTRACT ECONOMICS* 251, 261-65 (Lars Werin & Hans Wijkander eds., 1992) (discussing the agency costs that arise when organizations try to mediate control of knowledge, information, and decision-making power).

90. See BARNARD, *supra* note 85, at 6 ("The survival of an organization depends upon the maintenance of an equilibrium of complex character in a continuously fluctuating environment . . . which calls for readjustment of processes internal to the organization.").

91. See WILLIAMSON, *MECHANISMS OF GOVERNANCE*, *supra* note 32, at 226.

92. This is Williamson's phrase. *Id.* at 226 (discussing the issue of "intertemporal process transformations").

93. See generally JAMES G. MARCH & HERBERT A. SIMON, *ORGANIZATIONS* (1958).

94. See WILLIAMSON, *MECHANISMS OF GOVERNANCE*, *supra* note 32, at 229.

95. *Id.* at 226. "Once the unanticipated consequences are understood, those effects will thereafter be anticipated and the ramifications can be folded back into the organizational design. Unwanted costs will then be mitigated and unanticipated benefits will be enhanced. Better economic performance will ordinarily result." *Id.* In fact, since Coase re-characterized the "nature of the firm," the issue of "what happens within the firm"—of the economic effects on the interactions among firm participants—has been the principal focus in the theory of the firm. The main difference between Coase, Jensen and Meckling, Williamson, and progeny, on the one hand, and Simon and March, on the other, is that the former group does not really believe that the "intertemporal realities" are of much real economic consequence, given that market forces and evolution will provide any needed fix. See, e.g., Jensen & Meckling, *supra* note 32. Such a view of institutional change can provide obvious important insights, but it does not address the issues of "sticky institutions," path dependence, and what

arguing that “most coöperation fails in the attempt, or dies in infancy, or is short-lived.”⁹⁶

3. VENTURE CAPITAL-FINANCED START-UPS AS HEURISTIC-INTENSIVE FIRMS

When boundedly-rational actors interact in a complex environment, heuristics and satisficing becomes the norm.⁹⁷ As one would generally expect, the use of heuristics by economic actors tends to increase as environmental complexity increases.⁹⁸ There are a myriad ways to define *complexity*, but Eggleston, Posner, and Zeckhauser recently made the case that “complexity” in contractual environments depends on “(1) the expected number of payoff-relevant contingencies specified in the contract; (2) the variance in the magnitude of the payoffs contracted to flow between the parties; [or] (3) the cognitive load required to understand the contract.”⁹⁹

The description in Part I of this Article illustrates that the venture capitalist-entrepreneurial relationship involves a high degree of complexity. First, given the high degree of uncertainty in the innovation and start-up markets, the expected number of payoff-relevant

happens when one relaxes the rational actor model on which the market-intensive view of organizational change depends. For a discussion of path dependence and other market failures affecting institutional change, see, for example, JACK KNIGHT, *INSTITUTIONS AND SOCIAL CONFLICT* (1992); GARY J. MILLER, *MANAGERIAL DILEMMAS: THE POLITICAL ECONOMY OF HIERARCHY* (1992); DOUGLASS C. NORTH, *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE* (1990); Mark Granovetter, *Economic Action and Social Structure: The Problem of Embeddedness*, 91 *AM. J. SOC.* 481 (1985).

96. BARNARD, *supra* note 85, at 5.

97. See, e.g., SIMON, *supra* note 69, at 35-36 (arguing that heuristic search is a powerful decision-making tool in the face of the complexity of business firms, which must be satisfied with “find[ing] good enough answers to questions whose best answers are unknowable”); see also SIMON, *supra* note 85, at 243-44 (discussing the interaction between individual bounded rationality and group decision-making).

98. See, e.g., SIMON, *supra* note 69, at 36 (arguing that heuristic techniques are the best possible approach, particularly with large complex economic issues); John W. Payne, *Task Complexity and Contingent Processing in Decision Making: An Information Search and Protocol Analysis*, 16 *ORGANIZATIONAL BEHAV. & HUM. PERFORMANCE* 366 (1976).

99. See Karen Eggleston et al., *The Design and Interpretation of Contracts: Why Complexity Matters*, 95 *NW. U. L. REV.* 91, 97-100 (2000). For various other conceptions of complexity in the law, see also Nabil I. Al-Najjar, *Incomplete Contracts and the Governance of Complex Contractual Relationships*, 85 *AEA PAPERS & PROCS.* 432 (1995); Louis Kaplow, *A Model of the Optimal Complexity of Legal Rules*, 11 *J.L. ECON. & ORG.* 150 (1995).

contingencies will be high. Secondly, the variance in payoffs that can potentially flow between the parties will again be high given, among other things, the use of stock-options to compensate entrepreneurs and the use of staged financing. Finally, the general newness of innovations increases the cognitive load for both parties. Since entrepreneurs are generally new to venture capital financing, they also face the cognitive load of trying to make sense of the interrelationship between the various contracts and the transactional environment. Thus, relative to other less complex contracts, one would expect that the contractual relationship between venture capitalists and entrepreneurs would be *heuristic-intensive*.¹⁰⁰

An additional reason why venture capital-financed ventures are heuristic-intensive is that they are expected to undergo a series of rapid institutional transformations. First, the *innovation* must be transformed from idea to viable innovation to testable and marketable product. This must be accomplished rapidly, given the threat of new entrants and the timetable of the venture capitalist's exit. Transforming the innovation is more of an iterative process than a linear one.¹⁰¹ For example, the entrepreneur may have to re-tinker with the innovation after the product goes through beta testing or in reaction to new products introduced by competitors. In short, innovation projects take a long time to execute,

100. I use the phrase heuristic-intensive to underline the fact that, given the general complexity surrounding the innovation process, both entrepreneurs and venture capitalists will have to concern themselves not only with the actions that they wish to take, but also with the limitations of the underlying decision-making and problem-solving processes by which they will go about deciding how to act. This concern with studying organizations from the point of view of the decision-making processes that eventually lead to actions by economic actors is central to Simon's study of decision-making by boundedly rational individuals. See SIMON, *supra* note 85, at 1 (arguing that given the bounded rationality of organizational actors, any examination of organizations needs to closely scrutinize "the process of choice that leads to action"). This is an area that, according to Simon, had been mostly neglected by those studying organizations up to that point. Among the two exceptions that he notes is Chester Barnard's work on the role of the executive. *Id.* at 1 n.1 (citing BARNARD, *supra* note 85); see also WILLIAMSON, *ECONOMIC INSTITUTIONS*, *supra* note 32, at 5-6 (underlining the importance of Barnard's work as a basis for his transaction cost theory).

101. As Jorde and Teece have pointed out, innovation involves: the search for, and the discovery, development, improvement, and adoption of new processes, new products, and new organizational structures and procedures. It involves risk taking and uncertainty[,] . . . probing, experimenting, testing, and reprobating. "Dry holes" and "blind alleys" are the rule and not the exception.

Thomas M. Jorde & David J. Teece, *Innovation, Cooperation and Antitrust*, 4 HIGH TECH. L.J. 1, 5 (1989).

and there is no guarantee that they will be completed.¹⁰²

Secondly, the entrepreneur must transform herself from an inexperienced managing-entrepreneur to a manager who can effectively run the venture, bring the product to market, and carry out an initial public offering. Initially, she must continue the innovation task until the innovation is transformed into a marketable product. Eventually, however, the entrepreneur will be expected to turn her attention more fully to managing and marketing. To transform herself into an effective manager, an entrepreneur must embark upon a fast-paced acquisition of human capital. An entrepreneur's decision about how to develop her human capital is an important source of her ability to maneuver during the venture—her *ex post* bargaining power. As we will see below, an entrepreneur's decisions about whether and when to engage in innovating and managing tasks can lead to costly strategic behavior.

Finally, the *start-up* must be transformed from a small start-up with its thread-bare organizational structures into a viable firm with solid organizational structures that are able to withstand volatile products and financial markets. This "professionalization" process includes the creation of hierarchical management structures¹⁰³ and institutional frameworks to attract customers, suppliers who will sell on credit, and other debt and equity investors.¹⁰⁴ Additionally, institutional frameworks must be developed to properly disperse innovation-related information among various participants in the venture.¹⁰⁵

4. SUMMARY

Both Simon and Barnard make the point that cooperation within organizations is fragile. Careful thought must be given to the manner in which coordination can provide the required "glue" for ongoing organizational cooperation. Venture capital-financed start-ups are particularly fragile cooperative ventures, due to the highly volatile competitive environment in which they operate, the uncertainties surrounding the innovation process¹⁰⁶ and the volatility of the capital

102. Holmstrom, *supra* note 27, at 309 (stating that innovations involve "an invention, a development and a completion stage, and can be terminated between those").

103. See Hellmann & Puri, *supra* note 19, at 170.

104. See Thomas Hellmann, *Entrepreneurship and the Process of Obtaining Resource Commitments 2* (Feb. 2000) (unpublished manuscript, on file with author).

105. On the importance of creating informational channels within firms, see ARROW, *supra* note 89, at 39-41.

106. For a discussion of volatile environments and their effect on firm survival,

markets required for an IPO.¹⁰⁷ They are, as I argued above, heuristic-intensive. Established firms like IBM or Exxon still attend to coordination issues, but they do so mostly to reduce overall firm costs. In short, established firms are concerned with efficiency;¹⁰⁸ start-ups are concerned with survival.¹⁰⁹

B. Original Expectations and Venture Capital Scripts: Framing the Terms of the Bargain

Approaching the study of venture capital transactions from the point of view of both venture capitalists and entrepreneurs reveals that both parties face informational problems. The venture capital literature has made clear that a venture capitalist, at the time of making an investment, is at an informational disadvantage vis-à-vis the entrepreneur regarding the quality of the innovation and the abilities of the entrepreneur. However, as I argue in this Article, entrepreneurs are at an informational disadvantage vis-à-vis venture capitalists. For example,

particularly that of young firms, see Dennis P. Slevin et al., *The Influence of Environmental Hostility on the Effective Management of New Ventures*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 178 (1991); Sahlman, *supra* note 51, at 33 (stating that entrepreneurs and venture capitalists are “making extraordinarily complex decisions in environments characterized by great uncertainty”); see also John Markoff, *A Quicker Pace Means No Peace in the Valley*, *N.Y. TIMES*, June 3, 1996 at D1 (describing how the “frenetic pace of business in [Silicon Valley] has become downright fiendish, propelled by the explosive growth and implacable demands of the Internet,” and quoting a top Hitachi corporation executive’s sermon to his management team: “Speed is God And time . . . is the devil”).

107. See Mark A. Mowrey, *Intimidated Public Offerings*, *INDUSTRY STANDARD*, Apr. 24, 2000 (discussing the cancellation or postponement of scheduled IPOs and secondary offerings after the record decline of the NASDAQ during the week of Apr. 9, 2000), <http://www.thestandard.com/article/0,1902,14182,00.html>; see also Jim Evans & Jonathan Rabinovitz, *VCs Trapped on Sand Hill Road*, *INDUSTRY STANDARD*, Apr. 14, 2000 (discussing venture capitalists’ change of strategies after downturn in IPO market for consumer-oriented e-commerce and business-to-business companies, from seeking an IPO exit to trying to sell companies within their portfolios to established “old economy” companies and combining portfolio companies to form larger, more diversified companies), <http://www.thestandard.com/article/0,1902,14151,00.html>.

108. See RICHARD R. NELSON & SIDNEY G. WINTER, *AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE* 107-12 (1982) (arguing that within mature organizations, established “routines” serve a “truce” function, helping mediate and resolve potential intrafirm conflicts).

109. See, e.g., Philip Anderson, *Microcomputer Manufacturers*, in *ORGANIZATIONS IN INDUSTRY: STRATEGY, STRUCTURE AND SELECTION* 36, 54 (Glenn R. Carroll & Michael T. Hannan eds., 1995) (finding that “uncertainty,” the “inability to project the future from the past,” increased failure rates).

an entrepreneur will not know important information about the venture capitalist or about the venture capital process needed to properly value the transaction.

1. COORDINATION AND ORIGINAL EXPECTATIONS

So far we have been assuming that the parties want to form a venture—that is, that they want to cooperate—and that the critical issue is how to coordinate their actions to achieve the original bargain. At the point in time when venture capital contracts are signed, and the venture capitalist makes its first capital contribution to the start-up, we can assume that each party has a set of beliefs and expectations about the transaction, congruent enough to allow them to solve the original coordination problem. I will refer to each party's beliefs and expectations as their "original expectations." In order to give content to the notion of original expectations, we need to get a better sense of how expectations are constructed. Although there are myriad approaches that one can take in analyzing how individuals construct their expectations, I want to focus on a bottom-up approach, whereby facts about the world—information—give way to beliefs, which in turn give way to expectations.

a. Original Expectations: From Facts to Beliefs

A party's original expectations will, in part, be based on beliefs regarding the nature of the transaction. At a general level, one can define "belief" as a disposition to assent to questions regarding those beliefs.¹¹⁰ For example, if I believe that Napoleon lost at Waterloo, it would just mean that I have the disposition to answer yes if so asked. However, I want to focus on how our beliefs affect what we do and how they affect the actions that we take;¹¹¹ in short, I want to focus on how beliefs act as "maps by which we steer."¹¹² Thus, we can define "belief" more specifically as a sort of mental representation—a formal

110. W. V. QUINE & J. S. ULLIAN, *THE WEB OF BELIEF* 10 (2d ed. 1978).

111. *E.g.*, FRED DRETSKE, *EXPLAINING BEHAVIOR: REASONS IN A WORLD OF CAUSES* 79 (1988) (arguing that a model of belief should, in the end, "reveal the way in which *what we believe* helps to determine *what we do*").

112. This notion of beliefs is based on Frank Ramsey's statement that a "belief of the primary sort is a map of the neighbouring space by which we steer." FRANK PLUMPTON RAMSEY, *THE FOUNDATION OF MATHEMATICS AND OTHER LOGICAL ESSAYS* 238 (R. B. Braithwaite ed., 1931).

structure representing meaningful facts or information—that is mapped in some fashion to actions or some other cognitive goal.¹¹³

We can view beliefs as tracking facts or information in the real world.¹¹⁴ One cognitive goal, therefore, would be having true beliefs, in the sense that the beliefs correspond in some fashion to true facts about the world.¹¹⁵ However, it is not clear that having true beliefs is always fruitful. There may be situations where one would be better off having false beliefs.¹¹⁶

For example, the probability that an innovation will be successful is in reality very low. If innovators hold true beliefs regarding this fact, they may decide not to innovate at all. Therefore, an innovator who gets positive utility from innovating may be better off having a false belief regarding the probability of failure. Thus, context is important in analyzing whether false beliefs help or hurt an individual. As we will see below in the innovating context, the false beliefs emanating from the over-optimistic interpretation of facts will usually have a positive effect, while over-optimism in the contracting context can lead to false beliefs that hurt the entrepreneur in negotiating with the venture capitalist.¹¹⁷

One way of analyzing how individuals go about constructing their beliefs is to focus on the way that they transform information into beliefs. If we assume that an individual is trying to achieve some goal—for example, solve a problem, or decide what action to take—the individual will start with some background beliefs (tracking some previously evaluated information) and then ascertain what type of information is required to update and supplement those background

113. See Radu J. Bogdan, *The Manufacture of Belief*, in BELIEF: FORM, CONTENT, AND FUNCTION 149, 151 (Radu J. Bogdan ed., 1986) (characterizing “belief” as a function from a mental representation, with both syntactic form and intentional content, to a cognitive or behavioral role).

114. *Id.* at 160-61.

115. See, e.g., ROBERT NOZICK, *THE NATURE OF RATIONALITY* 67-68 (1993) (discussing the various reasons usually given in the literature for privileging true beliefs).

116. *Id.* at 69 (discussing situations where having true beliefs would undermine other goals held by an individual).

117. For a similar argument regarding some of the benefits of undue optimism regarding the risks attendant to marriage and potential divorce, see Lynn A. Baker & Robert E. Emery, *When Every Relationship is Above Average: Perceptions and Expectations of Divorce at the Time of Marriage*, 17 *LAW & HUM. BEHAV.* 439, 448 (1993) (arguing that to the extent that society has an interest in encouraging marriage, such over-optimism may be beneficial since it can lead to a greater number of marriages than if the parties were fully cognizant of the risks).

beliefs.¹¹⁸ By seeking out and evaluating new information (or reinterpreting already known information), an individual can construct new beliefs based in part on the background beliefs, but which are more carefully tailored toward achieving the desired goal.¹¹⁹

For example, if the desired goal involves undertaking a set of actions, then the individual's expectations about the potential result of her actions will, in part, be affected by her beliefs.¹²⁰ Moreover, once the results of the actions are evaluated against the expectations leading to those actions, the beliefs will be revised to take into account what was learned from undertaking such actions.¹²¹ This feedback effect between actions motivated by beliefs and the subsequent revision of beliefs resulting from evaluating the results produced by the undertaken actions are best interpreted within circumscribed contexts. Within these contexts, the disorderly mass of facts about the world are partitioned in a manner that allows individuals to make better sense of what facts are relevant for constructing particular beliefs and for evaluating how well the beliefs track these facts.

In most instances, the parties will have imperfect information regarding the contractual context since they will not be cognizant of all the relevant facts about the world relevant to the contract. When two parties enter into a contract and they have imperfect information, there are informational asymmetries. In other words, the beliefs that a party may have regarding the actions it expects the other party to take, or regarding other aspects of the transaction, may be false in the sense that they do not track the true facts relevant to the contractual context.

The procedures used by venture capitalists and entrepreneurs to gather and evaluate those facts will affect the beliefs that each party will have regarding the venture capital contracts. During the negotiations leading to an agreement, new beliefs will be acquired and old ones revised, based in part on the interaction between the two parties.¹²²

118. See Bogdan, *supra* note 113, at 158-59.

119. *Id.* at 163-64 (discussing how belief is manufactured, in part, by "forming, connecting, and moving around various blocks of information in arrangements appropriate to the cognitive issue to be dealt with"); see also NOZICK, *supra* note 115, at 98 (discussing how, in certain contexts, a background framework of beliefs is taken for granted).

120. See NOZICK, *supra* note 115, at 99.

121. *Id.* (arguing that "[b]eliefs about the world feed forward into actions, and the (perceived) results of these actions . . . feed back, positively or negatively, upon the beliefs").

122. Venture capitalists and entrepreneurs also engage in informal pre-negotiation "negotiations" when they first start interacting with each other to try to determine

Throughout the negotiation process, each party will attempt to ascertain the beliefs and expectations of the other party, as well as try to change them, recast them. This is all a usual part of the bargaining process.¹²³

b. Contracts as "Plans"

We can generally assume that parties enter into contracts because they are trying to achieve various goals. In achieving the contractual goals, a party will have to undertake a series of actions and will need the other party to take certain actions.¹²⁴ When an individual is faced with deliberating about what actions to take within the context of long-term contractual relationships, she will be unable, given her bounded rationality, to carry out all deliberations regarding potential actions at the same time she is expected to make a decision regarding such actions.¹²⁵ As a result, when individuals are faced with coordinating

whether to go ahead and try to reach a formal agreement. On the important role of such pre-negotiation negotiations in shaping expectations, exploring possible options, and identifying critical issues that would have to be bargained over in formal negotiations, see Howard Raiffa, *Analytical Barriers*, in *BARRIERS TO CONFLICT RESOLUTION* 132, 141 (Kenneth J. Arrow et al. eds., 1995).

123. See, e.g., Robert H. Mnookin & Lee Ross, *Introduction*, in *BARRIERS TO CONFLICT RESOLUTION*, *supra* note 122, at 2, 8-10 (discussing the use of secrecy and deception as well as various "hardball" tactics in negotiations).

124. One can view a contract as the vehicle used by parties to set forth the actions that the parties expect to take during the life of the contract. By actions, I mean both doing something and doing nothing (e.g., not exercising an option by simply letting it expire). Of course, contracts play many other roles, but one goal, particularly of long-term contracts, is to delineate in some fashion the actions that the parties are expected to take. Under this characterization, a contract will be incomplete if it fails to state or only partially states an action that one or more parties will eventually have to take. Often these omitted actions are not known to one or both of the parties at the time of contracting, but they become apparent during the life of the contract. This is the case when an unforeseen event occurs which requires that one or more of the parties take action. For example, the parties may have not specified what action to take if a war breaks out during the life of the contract which leads to the Suez Canal being closed. Additionally, incomplete information and bounded rationality can lead to actions not being specified in the contract even though both parties know that it will be required (or that there is a high probability that it will be required) because the transaction costs associated with specifying it in the contract are too high. For example, the parties may know that there is a high probability that the Suez Canal will be closed (maybe a war has already broken out), but they cannot agree on what actions the parties should take if the Canal were actually to close during the life of the contract. It may be the case that bargaining costs of specifying the required action ahead of time are too high. Finally, a contract may actually specify an action but in a manner that is ambiguous or vague.

125. See MICHAEL E. BRATMAN, *INTENTION, PLANS, AND PRACTICAL REASON* 10-11 (1987) (discussing the problem of decision-making by individuals given bounded

their actions over time, they will tend to break up the problem of deliberating over such actions into smaller, more manageable pieces. Parties will deliberate over time; they will “plan.”¹²⁶

Planning, therefore, allows individuals to mediate between the present and the future in a world of bounded rationality,¹²⁷ thereby allowing them to undertake more complex tasks.¹²⁸ Having a plan means that we have some sort of commitment or intention to undertake an action in the future.¹²⁹ During the time between planning and acting, we may formulate sub-plans regarding intermediate actions required to reach the final goal.¹³⁰ In the end, a plan is defeasible in the sense that it is a mechanism (in the form of a “soft” commitment) to reduce the bounded rationality constraint, but one that is not binding; we may change our mind, decide not to take an action, or act in a different manner.¹³¹

In summary, at the time of contracting, each party will have a sort of plan or set of contingent intentions regarding the actions that it expects to take during the life of the contract. One purpose of a contract, therefore, is to set forth in part the plan each party has regarding future actions, allowing the parties to better coordinate their actions.

c. Revisiting the Definition of “Original Expectations”

We can now revisit the definition of a party’s *original expectations*, and I argue that it will comprise: (1) a set of beliefs regarding various aspects of the transactions—for example, beliefs regarding potential monetary and non-monetary costs and benefits of entering into the

rationality, and the role of planning in reducing the bounded rationality constraint).

126. *Id.* at 30 (discussing how through planning “our deliberation and our action is systematically extended over time”).

127. See Michael E. Bratman et al., *Plans and Resource-Bounded Practical Reasoning*, in *PHILOSOPHY AND AI* 7, 7-8 (Robert Cummins & John Pollock eds., 1991) (discussing the fact that, given bounded rationality, deliberation will take time—which increases as the complexity of the task increases—and that the world about which an individual is deliberating will tend to change during the time in which she is engaged in deliberation).

128. See BRATMAN, *supra* note 125, at 28 (discussing the role of planning in allowing individuals to undertake more complex tasks).

129. *Id.* at 29 (defining “plans” as “mental states involving an appropriate sort of commitment to action: I have a plan to *A* only if it is true of me that I plan to *A*”).

130. *Id.* (arguing that plans are usually filed out over time and that they are often embedded in a hierarchical fashion).

131. *Id.* at 32.

transaction; (2) a set of defeasible plans regarding future actions that it expects to take during the life of the contract; and (3) some belief regarding the other party's overall beliefs and plans regarding future actions.

Agreeing to the bargain betrays the fact that, at some level, the parties intended to enter into a cooperative venture, even if the parties' conception of the exact parameters of that cooperative venture did not completely coincide.¹³² In other words, one can expect that neither party will have complete knowledge of the other party's set of beliefs and plans (original expectations) that led them to cooperate in forming the venture.¹³³ However, the parties' original expectations will provide a "background framework"¹³⁴ against which each party will evaluate new options or potential actions as they become relevant during the life of the contract. The original expectations will act as a set of glasses that will restrict the gaze of the parties as they continue to deliberate and act during the life of the contract.¹³⁵ The parties can always remove the glasses and put on new ones, but such a change would require reinterpreting the original meaning that the party gave to the contract.

d. Divergent Original Expectations

Given the discussion above, this Article asks the following question: What happens when two parties reach an initial agreement only to find that one or both of the parties were in fact significantly misinformed about their original expectations? In other words, what

132. See BERNARD WILLIAMS, *MAKING SENSE OF HUMANITY AND OTHER PHILOSOPHICAL PAPERS* 113 (1995) (arguing that the choice of an individual to cooperate with another will be affected by the parties' dispositions and attitudes, including attitudes toward risk, cooperation generally, to the kind of cooperative venture being entered into, and to the other party or to the group to which the other party belongs).

133. *Id.* at 113-14 (arguing that one party's perceptions of the other's attitudes or dispositions will affect the other party's beliefs, and, hence, the other party's decision about whether to engage in a cooperative enterprise).

134. See BRATMAN, *supra* note 125, at 33-34 (discussing how prior intentions and plans provide a background framework used to weigh various options regarding potential actions).

135. In most instances, one can assume that the original expectations of each party are not identical. This will be the case due to (1) differences in the facts regarding the contractual context available to the parties—i.e., informational asymmetries and incomplete information; (2) differences in the procedures used to gather and interpret those facts in order to construct beliefs—e.g., cognitive biases, such as over-optimism; and (3) differences in the way those beliefs are used to construct plans regarding the future actions a party expects to take and those it expects the other party to take.

happens when a party, at the time of entering the transaction, had false beliefs regarding the contractual context—that is, beliefs that significantly diverged from the true facts about the transaction?

I will use the term *divergent original expectations* to refer to the extent to which a party's beliefs about the transaction—including her belief of the other party's own beliefs and plans—diverge from or fail to track the true facts about the transaction. This can be the case due to informational asymmetries, misrepresentations, imperfect information, or cognitive biases such as over-optimism.¹³⁶ One important consideration is whether one party is in a better position to assure that its own and the other party's original expectations do not diverge too much from the true facts regarding the contractual context.

The divergence in original expectations of an entrepreneur matters, because as this divergence becomes clear during the life of the venture, she will engage in self-preserving strategic behavior as well as retaliation.¹³⁷ Any time that a party enters into a contract, there is the possibility of disappointment when what occurs during the life of the contract conflicts with prior expectations.¹³⁸ One can generally assume that the greater the divergence between expectations and the reality that

136. For example, as we will see below, entrepreneurs tend to be more over-optimistic than non-entrepreneurs. See *infra* Part II.E. This over-optimism will lead the entrepreneur to adopt procedures for gathering and interpreting facts about the contractual context that will lead her to form beliefs about the contract that are generally mistaken regarding the amount of risk that the entrepreneur is undertaking. Additionally, plans constructed in part on false beliefs will be skewed, in that they incorporate potentially false actions that a party expects to take and that it expects the other party to take during the life of the venture.

137. For a discussion of self-preserving strategic behavior and retaliation by entrepreneurs, see *infra* Part V.

138. See David E. Bell, *Disappointment in Decision Making Under Uncertainty*, in DECISION MAKING: DESCRIPTIVE, NORMATIVE, AND PRESCRIPTIVE INTERACTIONS, *supra* note 71, at 358 (stating that disappointment is “a psychological reaction to an outcome that does not match up to expectations”). For an early discussion and sustained development of discontent and dissatisfaction as important factors in economic theory, see ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES 62-65 (1970) [hereinafter HIRSCHMAN, EXIT, VOICE, AND LOYALTY]. Hirschman later developed, in more detail, a theory of how disappointment leads to changes in preferences. See ALBERT O. HIRSCHMAN, SHIFTING INVOLVEMENTS: PRIVATE INTEREST AND PUBLIC ACTION 9-45 (1982) [hereinafter HIRSCHMAN, SHIFTING INVOLVEMENTS]. David Bell has set forth a more technical exposition of the role of disappointment and the role of decision-makers in attempting to reduce disappointment. See Bell, *supra*; see also Moritz Schlick, *The Foundation of Knowledge* (David Rynin trans.), in LOGICAL POSITIVISM 209, 223 (A. J. Ayer ed., 1959) (discussing the role of verification and falsification in science, indicating that the former leads to the cognitive notion of “joy” while the latter leads to “disappointment”).

subsequently emerges, the greater the disappointment will be.¹³⁹ Albert Hirschman argues that disappointment needs to be integrated into economic theory since the repercussions of disappointment are more likely to lead economic actors to take action (they are more likely to trigger “mechanisms of recuperation”)¹⁴⁰ than is the case when reality exceeds expectations.¹⁴¹ Thus, disappointed entrepreneurs may take retaliatory action.

e. Summary

In conclusion, when parties enter into a cooperative venture, they know that they are taking some risk regarding their knowledge of the other party’s beliefs and plans. If the risks turn out to be greater than expected, then the reasons behind the unforeseen risks might affect the reactions of the misinformed party. For example, if the error was due to the other party misrepresenting her beliefs and plans, then one would expect the affected party to react more harshly than if it were due to her own mistaken perceptions. As we will see below, if an entrepreneur’s false beliefs are due to a venture capitalist’s actions—e.g., misstatements

139. See Bell, *supra* note 138, at 358. Hirschman makes a similar point regarding revolutions, where the high expectations regarding the outcome of the revolution will often lead to a wide divergence between expectations and reality. Revolutionaries, who generally have sacrificed the most in carrying out the revolution, will have greater incentives to change the outcome anew once the gap between expected results and actual outcomes becomes obvious. In doing so, they will often take with them fellow revolutionaries, now labeled “counterrevolutionaries,” fulfilling the general maxim that “revolution, like Saturn, devours its own children.” HIRSCHMAN, EXIT, VOICE, AND LOYALTY, *supra* note 138, at 95. For a thorough study of these so-called Thermidorean reactions (a reference to the month in the French revolutionary calendar when such a Saturnian twist of fate took place), see CRANE BRINTON, THE ANATOMY OF REVOLUTION (1965).

140. This is the general term used by Hirschman to refer to the mechanisms of exit and voice. See, e.g., HIRSCHMAN, EXIT, VOICE, AND LOYALTY, *supra* note 138, at 3.

141. See HIRSCHMAN, SHIFTING INVOLVEMENTS, *supra* note 138, at 14-17. Hirschman makes the point that there is no single word that serves as an antonym to disappointment, capturing the psychological notion of situations when reality exceeds expectations. *Id.* at 12-13. The reason he gives for this is that it is “much more common for expectations to exceed reality than for reality to exceed expectations.” *Id.* at 13. Moreover, in some instances, economic actors will suffer from cognitive dissonance, which may (initially) prevent them from realizing the divergence between expectations and reality. However, after a certain threshold is passed in the level of divergence between expectation and reality, the individual will become cognizant of the divergence, and due to the delay, may well experience disappointment “with a vengeance.” *Id.* at 16-17.

or non-disclosure—it is more likely that the entrepreneur will retaliate against the venture capitalist.¹⁴² Such retaliation will increase the costs of the ongoing adaptation and coordination within the venture, causing various inefficiencies, including increasing the probability that an otherwise viable venture with a socially useful innovation will fail.¹⁴³

2. OF “SCRIPTS”

“Scripts” are a useful way of framing the issue of expectations and coordination when a party is a repeat player, as the venture capitalist is in this context. A *script* can be defined as “a set of expectations about what will happen next in a well-understood situation.”¹⁴⁴ They are useful in encoding memory and knowledge in order to make our mental processing easier, allowing us to draw inferences.¹⁴⁵ Scripts are not static, but will change over time as we use them in slightly different or analogous situations.¹⁴⁶

For example, if one goes to a restaurant, is given a menu, and a few minutes later the waiter returns, pad in hand, we know what to do—we order dinner. We don’t expect that the waiter has returned to juggle

142. *See infra* Part V.

143. While Chester Barnard did not focus directly on the issue of “fairness,” he did place great emphasis on the importance for firm survival that executives have a well developed “moral code” to guide their actions and to effectively mediate conflict among members of the organization. *See* BARNARD, *supra* note 85, at 258-84 (all of Chapter 27, “The Nature of Executive Responsibility,” deals with the importance of these managerial moral codes).

144. ROGER C. SCHANK, *TELL ME A STORY: A NEW LOOK AT REAL AND ARTIFICIAL MEMORY* 7 (1990) (drawing the comparison between the script of a play or movie and the notions of script as he is using it: “In a sense, many situations in life have the people who participate in them seemingly reading their roles in a kind of play”). For a more detailed analysis of the role of scripts, see ROGER C. SCHANK & ROBERT P. ABELSON, *SCRIPTS, PLANS, GOALS & UNDERSTANDING: AN INQUIRY INTO HUMAN KNOWLEDGE STRUCTURES* (1977); *see also* Richard Nisbett & Lee Ross, *Judgmental Heuristics and Knowledge Structures*, in *NATURALIZING EPISTEMOLOGY* 189, 205-06 (Hilary Kornblith ed., 1985) (arguing that a script is like a “cartoon strip with two or more captioned ‘scenes,’ each of which summarizes some basic actions that can be executed in a range of possible manners and contexts”).

145. Nisbett & Ross, *supra* note 144, at 206 (describing scripts as an encapsulation of knowledge, so that it can be easily retrieved and used to draw inferences).

146. Scripts bear some resemblance to Nelson & Winter’s use of the term “routine,” which they define as “all regular and predictable behavioral patterns of firms,” although routines are to be understood against an evolutionary background, playing “the role that genes play in biological evolutionary theory.” NELSON, *supra* note 108, at 14.

dinner plates or recite Prufrock. We also don't expect to enter into price negotiations with the waiter regarding the chocolate soufflé. That is because we are quite familiar with the "restaurant script"—we go, sit, read the menu, accept the prices or walk out, order the food from the waiter, eat, pay, and leave. We don't have to be told what to do.¹⁴⁷

Scripts allow parties to construct more reliable beliefs and plans. As mentioned above, plans allow parties to mediate between the present and the future, given their bounded rationality, by breaking up the deliberation process over time. Similarly, scripts allow a party to deal with bounded rationality by providing an easily accessible repository of information and knowledge. This information and knowledge encapsulates the manner in which one action can be expected to lead to a subsequent action in well-understood scenarios. By allowing individuals to anticipate expected actions in well-known repeat situations, and by potentially reducing the computational constraints of deliberating, scripts are a useful aid in formulating and executing plans.

Like plans, scripts allow parties to better coordinate their actions. In other words, scripts are a source of focal points, since they provide easily accessible signals from memory, reinforced through repeated experiences, of "knowing how to act and how others will act in given stereotypical situations."¹⁴⁸ However, different individuals may have slightly different scripts for the same type of interactions. Ambiguities, misunderstandings, and arguments can all emanate from parties following different scripts in the same context, or failing to acknowledge the potential multiplicity of scripts.¹⁴⁹ For example, business lawyers are useful in a transactional context because they possess a repository of scripts concerning business transactions and can translate them. This will allow parties with different bases of knowledge to transact with each other.¹⁵⁰

147. See SCHANK & ABELSON, *supra* note 144, at 42-46 (describing the "restaurant script," of which the one above is a variation, to illustrate the usefulness of scripts in organizing prior knowledge).

148. SCHANK, *supra* note 144, at 7.

149. See, e.g., Nisbett & Ross, *supra* note 144, at 206 (arguing that one of the potential costs associated with scripts is "the possibility of erroneous interpretations, inaccurate expectations, and inflexible modes of response").

150. For an argument that securities lawyers play such a role, see Manuel A. Utset, *Producing Information: Initial Public Offerings, Production Costs, and the Producing Lawyer*, 74 OR. L. REV. 275 (1995).

3. VENTURE CAPITAL SCRIPTS AND ENTREPRENEURIAL EXPECTATIONS

In the start-up context, venture capitalists, as repeat players, will have repositories of knowledge and information acquired in previous transactions, which I will refer to as *venture capital scripts*. These scripts will allow venture capitalists to evaluate transactional situations, make sense of new information acquired during the bargaining process, judge the entrepreneur's business plan, and so on.¹⁵¹ Venture capital scripts allow venture capitalists to anticipate many of the actions that it expects the entrepreneur to take during the life of the venture. Moreover, the venture capitalist will know from prior transactions how it expects to act if things go as originally planned, what types of things can go wrong, and what possible set of solutions are available.

Obviously, if Martians land in Silicon Valley, the venture capitalist may not know what to do.¹⁵² If instead a new competitor enters the market or the FDA does not approve a drug, the venture capitalist will, from experience, have some sense of what it will do next. In short, venture capital scripts will allow a venture capitalist to have a more complete and coherent set of pre-financing beliefs and plans.¹⁵³

Experienced venture capitalists, as a group, have a set of well-defined and well-internalized scripts. Of course, not all venture capitalists react the same way, but the entrepreneur is not contracting

151. See, e.g., Herbert A. Simon et al., *Expert and Novice Performance in Solving Physics Problems*, in 2 HERBERT A. SIMON, *MODELS OF THOUGHT* 243, 254 (1989) (reviewing literature showing that experts are not just possessors of larger amounts of information, but are a combination of greater information and a rich set of schematas "that can guide a problem's interpretation and solution and add crucial pieces of information"); see also Herbert A. Simon, *Making Management Decisions: The Role of Intuition and Emotion*, *ACAD. MGMT. EXECUTIVE*, Feb. 1987, at 57, 61 (discussing the use of chunking of information by experts in order to solve problems more efficiently). As we will see below, there is no good policy reason to give venture capitalists a "property right" over information and knowledge in venture capital scripts in order to provide them with an incentive to acquire it in the first place.

152. As J. L. Austin put it: if a real goldfinch "does something outrageous (explodes, quotes Mrs. Woolf, or what not) . . . we don't know what to say. Words literally fail us." AUSTIN, *supra* note 76, at 88.

153. This does not mean, however, that having set scripts is necessarily beneficial. If a venture capitalist has a set checklist of the qualities of a "good" entrepreneur and never deviates from it, the venture capitalist may fail to invest in otherwise very profitable ventures or invest in many similar transactions, not fully diversifying its portfolio. For a discussion of this situation and other cognitive constraints faced by venture capitalists, see Manuel Utset, *Cycling Overconfidence: Cognitive Bias, Availability Cascades & Excess Entry By Venture Capitalists, Investors, & Entrepreneurs* (2002) (unpublished manuscript, on file with author).

with *all* venture capitalists. That notwithstanding, it is likely that venture capitalists' scripts will converge over time, particularly when they interact with each other in joint financings and given geographic concentrations.

In contrast, an entrepreneur, even one who has business experience or has gone through the start-up process before, will have fewer useful scripts to frame her expectations and to construct her beliefs and plans regarding her relationship with the venture capitalist.¹⁵⁴ She may possess well-developed scripts regarding the innovation process but is unlikely to have well-developed scripts to help guide her through the venture capital process. This does not mean that she will not have other well-entrenched beliefs and plans regarding the venture. In fact, by the time an entrepreneur approaches a venture capitalist, the entrepreneur will have been toiling and working with *her* innovation and managing *her* start-up for a while. Thus, the entrepreneur will have certain preconceived expectations about the innovation and the relative roles of the parties in the start-up. These pre-financing beliefs will, of course, be partly revised once she starts bargaining and interacting with a venture capitalist. As mentioned above, these pre-financing beliefs will provide the basis for the entrepreneur's original expectations.

4. SUMMARY

In this Section we have looked at how parties' original expectations are constructed from facts about the contractual context. These facts provide the basis for the beliefs of the parties regarding the nature of the transactions and in turn affect the plans that the parties have regarding the actions that they expect to take during the life of the venture. We saw that both plans and scripts are useful tools available to parties in dealing with the problem of bounded rationality, particularly in heuristic-intensive start-ups operating in complex environments. In the end, the parties' original expectations matter because the greater the divergence between the assumed facts at the time of the bargain and the true facts, the greater the possibility that the parties will be surprised and disappointed and the greater the chance they will resort to strategic

154. See, e.g., 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) (arguing that novices in an area lack well-developed schemas and must rely more on heuristic problem-solving, while experts in the area have easily available schemas that allow them to better organize and deploy information in a more meaningful and efficient manner).

behavior.

C. *The "Founder's Disease" Script: Divergent Expectations About the Entrepreneur's Tenure with the Venture*

Venture capitalists routinely assume that entrepreneurs will be unable to make the transition to capable managers and eventually fire founding entrepreneurs, replacing them with professional managers. The assumption that entrepreneurs will be unable to make the transition to effective managers is so prevalent that it has its own catchy name: the "founder's disease."¹⁵⁵

1. VENTURE CAPITALISTS' EXPECTATIONS AND BELIEFS: THE
"FOUNDER'S DISEASE"

The general stereotype is that while an entrepreneur may be good at innovating, the "skill set" necessary to effectively manage a fast-growing company in a volatile environment is very different and not one usually possessed by an entrepreneur without prior managerial experience.¹⁵⁶ As Bob Zider stated in the *Harvard Business Review*, "[t]he person who starts the business is seldom the person who can grow it, and that person is seldom the one who can lead a much larger company. Thus it is unlikely that the founder will be the same person who takes the company public."¹⁵⁷

Moreover, Maryam Tashakori found that venture capitalists generally agree that "an entrepreneurial owner-founder seldom adapts his management style to the changing needs of the firm."¹⁵⁸ This perceived inability to adapt leads to the result that "the large majority of entrepreneurial owner-founders do *not* make the transition to a

155. See, e.g., MARYAM TASHAKORI, MANAGEMENT SUCCESSION: FROM THE OWNER-FOUNDER TO THE PROFESSIONAL PRESIDENT (1980); 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 (1992).

156. Generally, innovating and managing require different talents and skills. An entrepreneur good at getting her source code in order may not be as good at setting up necessary hierarchical structures to delegate decision-making within a venture.

157. Zider, *supra* note 33, at 139. A venture capitalist generally, directly or indirectly, controls the board of directors of the venture. Therefore, firing an entrepreneur is fairly simple. It merely requires getting a vote of the board and complying with the employment agreement.

158. See TASHAKORI, *supra* note 155, at 28.

professional style of management.”¹⁵⁹ In a sense, venture capitalists view that they are investing in two options: the first option is the option of whether to fund further stages or liquidate the venture; the second option, I would argue, is an option over the entrepreneur’s human capital—the option to continue to employ the entrepreneur or fire her.

The general acceptance of the founder’s disease script has been well documented in the entrepreneurial empirical literature, which has found that venture capitalists generally blame the poor management skills or lack of business savvy of entrepreneurs for a start-up’s shortcomings.¹⁶⁰ In a study of Silicon Valley firms, Hannan, Burton, and Baron found that the likelihood that the founder entrepreneur will be replaced as CEO is approximately (1) 10% within the first twenty months, (2) 40% after a year and four months years, and (3) over 80% after six years and six months.¹⁶¹

159. *Id.*

160. *See, e.g.,* Arnold C. Cooper & Albert V. Bruno, *Success Among High-Technology Firms*, BUS. HORIZONS, Apr. 1977, at 16, 18 (study of 250 high-technology firms with multiple founders, finding that fifty-two percent of the firms four or more years old had experienced the departure of at least one founder); Michael Gorman & William A. Sahlman, *What Do Venture Capitalists Do?*, 4 J. BUS. VENTURING 231, 238, 241 (1989) (finding that “venture capitalists almost uniformly attribute failures [of portfolio companies] they have observed to shortcomings in senior management” and founders generally); Donald C. Hambrick & Lynn M. Crozier, *Stumblers and Stars in the Management of Rapid Growth*, 1 J. BUS. VENTURING 31, 44 (1985) (study 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 INDUST. & CORP. CHANGE 503 (1996); *see also* Hellmann, *supra* note 34, at 59 (setting forth theoretical reasons why entrepreneurs would give a venture capitalist the power to fire them).

161. *See* Hannan et al., *supra* note 160, 526; *see also* Hellmann, *supra* note 34, at 58 (discussing data in study). In another study, Gorman and Sahlman asked venture capitalists how often they exercised their power to fire senior management:

The answer is, “Frequently.” The mean (in the statistical sense) venture capitalist has initiated the firing of three CEO/Presidents, or one 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 noticeably high incidence of what is for all parties a traumatic experience. It seems 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.

Gorman & Sahlman, *supra* note 160, at 241; *see also* Hellmann, *supra* note 34, at 57-58.

2. ENTREPRENEURS' EXPECTATIONS AND BELIEFS: LONG TERM EMPLOYMENT IN THE VENTURE

One can generally assume that an entrepreneur's beliefs at the time of entering the venture capital contracts is that she will not be fired by the venture capitalist. The fact that entrepreneurs agree to receive most of their compensation after a few years (when their stock options vest) indicates an expectation that they will be involved with the venture for some time; if they get fired before vesting, the options revert to the venture.¹⁶² As a result, the beliefs of entrepreneurs regarding the probability of getting fired bottom out on their perceived and mistaken facts about the contractual context.

The statements of venture capitalists in their promotional literature, aimed at wooing potential entrepreneurs, will help color an entrepreneur's perception of these underlying facts. This promotional literature often tries to present exactly the opposite picture implied by the "founder's disease" script. For example, the venture capital firm Draper Fisher Jurvetson states in its promotional literature:

Entrepreneurs are extraordinary individuals possessing unusual intelligence, energy, vision and drive, and should have large stakes in their companies that can generate great wealth for those who make the early sacrifices. We understand that the credit for success justly goes to the entrepreneur. We bet on the ability of the founding team to develop their business, adapt to inevitable changes in their plans, and to grow with their companies. Successful founders will surround themselves with the best people they can. While we will often help the founders recruit additional executives for their team, *we do not invest in any opportunity with the intention of replacing the founders.*¹⁶³

162. See *supra* Part I.B.2.

163. Draper Fisher Jurvetson, *Investment Philosophy*, at http://www.dfj.com/about/about_philosophy.html (last visited Jan. 18, 2002) (emphasis added). Other firms try to send similar signals. The venture capital firm Hummer Winblad, for example, lists "helping entrepreneurs grow into great CEOs" as one of the services it provides to its entrepreneurs. Hummer Winblad Venture Partners, *Helping You Win: Investment Partnerships*, at <http://www.humwin.com/helpwin.html> (last visited Jan. 18, 2002). Hummer Winblad explains:

A successful company is built by a strong and cohesive team with the leadership skills to inspire greatness, the vision to define the operating strategy, and the ability to recognize not only the business's strengths, but its

An increase in the probability of being fired increases the contractual risks faced by an entrepreneur.¹⁶⁴ One would expect that an entrepreneur will engage in self-preserving strategic behavior aimed at making it costlier for the venture capitalist to fire her, and engage in low-cost retaliatory action.¹⁶⁵

weaknesses as well. We are particularly fond of managers that seek to acquire best practices from market leaders—learning from other people’s mistakes rather than their own. We recognize that strong teams aren’t built overnight, and are always excited to work with individuals intent on surrounding themselves with excellence. Many Hummer Winblad companies began with two people and a strong vision.

Hummer Winblad Venture Partners, *What We Look For: Market, Team, Differentiation*, at <http://www.humwin.com/lookfor.html> (last visited Jan. 18, 2002). Similarly, Accel Partners reasons:

A talented venture firm reinforces management’s naturally good instincts on solving corporate problems and discerning industry directions. The less experience you have in some matters, the more you may need to rely on your venture firm’s advice. The more experience you have, the more you will appreciate the quality of the advice.

Accel Partners, *Accel Articles: Advice for First Time Entrepreneurs*, at <http://www.accel.com/entrepreneurs/advice.html> (last visited Jan. 18, 2002). Institutional Venture Partners emphasizes “patience and support”:

During a company’s early years, there are times when near-term obstacles seem almost insurmountable. The experienced venture capitalist has an appreciation for the hard work involved and the patience to allow management the time and resources necessary to implement its plan. We are proud of our reputation as one of the most supportive venture capital partners in the industry.

Institutional Venture Partners, *Choosing a Venture Capital Partner*, at http://www.ivp.com/entrepreneurs/entrepreneurs_chosing.html (last visited Jan. 18, 2002). Likewise, U.S. Venture Partners (USVP) reasons: “[s]everal of USVP’s partners have been successful CEO’s themselves and therefore understand many of the challenges and pressures facing our entrepreneurs.” U.S. Venture Partners, *The USVP Approach*, at <http://www.usvp.com/approach/index.html> (last visited Jan. 18, 2002).

164. For example, entrepreneurs usually agree to receive the bulk of their compensation once the venture has succeeded. As a result, being fired before these compensation rights have vested can be very costly to them.

165. Firms are of course worried about potential litigation arising from dismissals. See generally 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*, at <http://www.lgpatlaw.com/docs/pracadvc.html> (last visited Jan. 18, 2002). However, as we will see below, firms may not have an incentive to take actions to prevent low cost retaliation by the entrepreneur.

*D. Divergent Expectations over the Roles and
Relative Power of the Parties*

Any cooperative venture requires some coordination of the roles that the parties will play in the venture. However, if the parties have different beliefs regarding their relative goals, and, as a result, different plans regarding expected actions, ongoing firm coordination will become more difficult, particularly when changed circumstances bring the conflicting beliefs and plans to the foreground.¹⁶⁶

1. VENTURE CAPITALIST BELIEFS AND EXPECTATIONS: EMPLOYER-
EMPLOYEE RELATIONSHIP

The venture capital contracts described in Part I characterize the relationship between the venture capitalist and the entrepreneur as a one-sided agency relationship.¹⁶⁷ The incentive mechanisms are of the types ordinarily used in an employer-employee relationship, where the goal is to get the employee (the agent), to exert maximum effort and not to take actions that would hurt the interests of the employer-principal. The venture capitalist reserves the power to fire the entrepreneur and end her employment with the firm.¹⁶⁸

The venture capitalist, of course, understands that the entrepreneur is also a non-controlling shareholder. However, at least from the venture capitalist's perspective, this appears to be primarily an employer-employee relationship. This is because of (1) the level of control granted to the venture capitalist, (2) the fact that the entrepreneur's equity interest is subject to the potential of substantial dilution, and (3) the fact that a large portion of the entrepreneur's equity holdings will vest over time and only if the venture is actually

166. Again, due to the fact that the venture capitalist controls the venture (thus having the final say about what roles each party will actually play) and that, as a repeat player, it has greater information and knowledge regarding the contractual context, it is the entrepreneur who will more likely be in a position in which her beliefs regarding the parties' relative roles do not closely track the true facts.

167. See, e.g., Gompers, *supra* note 37, at 1484-85 (arguing that venture capitalists expect that the entrepreneur/agent will engage in actions that will increase agency costs and that the mechanisms in venture capital contracts, particularly staged financing, can be understood as addressing the agency cost issue). Investments are structured with an expectation of controlling agency costs imposed by entrepreneurs.

168. For an argument that entrepreneurs agree to grant control to venture capitalists in order to give them the ability to fire underperforming entrepreneurs and replace them with professional managers who would increase the overall value of the firm, see Hellmann, *supra* note 34, at 59.

successful.

2. ENTREPRENEURIAL BELIEFS AND EXPECTATIONS: THE CO-ADVENTURER RELATIONSHIP

In contrast, the entrepreneur has different beliefs. After all, it was her innovation, her venture, before the venture capitalist provided the capital. In the entrepreneur's eyes, the venture capitalist is a co-investor, a "partner" in the venture. In other words, the entrepreneur perceives the relationship more as a two-sided agency interaction, where both the venture capitalist and entrepreneur are principal and agents of each other—something more akin to a partnership.¹⁶⁹ The entrepreneur's general belief that the venture capitalist will be more than a capital provider,¹⁷⁰ that it will be the entrepreneur's "partner," is something that is emphasized in both the academic literature and in the venture capitalist promotional literature.

a. Venture Capital Literature Characterization: The Venture Capitalist as Agent

While the academic venture capital literature characterizes the relationship between venture capitalists and entrepreneurs as a one-sided agency relationship, it also emphasizes that the venture capitalist is more than a mere provider of capital. As one commentator argues, "we may also see the venture capitalist as agent for the entrepreneur. The entrepreneur brings in the venture capitalist as a financial partner and consultant."¹⁷¹ Additionally, venture capitalists often assist

169. Harry J. Sapienza, *When Do Venture Capitalists Add Value?*, 7 J. BUS. VENTURING 9, 21 (1992) (discussing Lee Tom Perry, *The Capital Connection: How Relationships Between Founders and Venture Capitalists Affect Innovation in New Ventures*, 2 ACAD. MGMT. EXECUTIVE 205, 209 (1988)).

170. For a discussion of the ways that venture capitalists add value to ventures in addition to the capital they provide, see generally *id.*; Jane Koloski Morris, *The Pricing of a Venture Capital Investment*, in PRATT'S GUIDE TO VENTURE CAPITAL SOURCES 57 (Jane K. Morris & Susan Isenstein eds., 13th ed. 1989); Harry J. Sapienza & Jeffrey A. Timmons, *Launching and Building Entrepreneurial Companies: Do the Venture Capitalists Add Value?*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 245, 248 (1989).

171. Christopher B. Barry, *New Directions in Research on Venture Capital Finance*, FIN. MGMT., Autumn 1994, at 3, 7-8 (also discussing both the venture capitalist's incentive to liquidate otherwise viable firms to focus their time on the portfolio companies that have the greatest chance for very large returns and the venture capitalist's incentive to take companies public before they are ready in order to signal to

entrepreneurs with strategic planning, act as a sounding board for entrepreneurs, help obtain alternative sources of equity and debt financing, act as an intermediary with other investors in the syndicate, monitor financial performance, help recruit professional managers, play an active advisory role on the board of directors,¹⁷² resolve compensation issues, introduce entrepreneurs to potential customers, assist with operational planning, and act as a certification agent to certify the quality of the venture¹⁷³ to potential underwriters or third parties wishing to acquire the venture.¹⁷⁴

In an empirical study of 173 start-up ventures in Silicon Valley, Hellmann and Puri found that the venture capitalists played a significant role in helping “professionalize” the start-ups, not only by helping find top management but also by helping recruit lower level employees, helping set up stock options, and helping with overall human resource

potential future investors in new venture capital funds); Kenneth K. Paqvalén, *How Does the Venture Capitalist-Entrepreneur Relationship Translate to the Performance of the Venture?* 19 (Helsinki Univ. of Tech., Inst. of Strategy and Int'l Bus. Working Paper, Feb. 3, 2001) (arguing that since the entrepreneur is also a major equity holder, she should be considered a “principal” and the venture capitalist her “agent”), available at http://www.tuta.hut.fi/coursedata/tu91167/_Reports2001.htm (last visited Feb. 2, 2002).

172. See, e.g., Joseph Rosenstein, *The Board and Strategy: Venture Capital and High Technology*, 3 J. BUS. VENTURING 159 (1988) (arguing that an important role of the venture capitalist is through its business advice as a member of the board of directors); Joseph Rosenstein et al., *Do Venture Capitalists on Boards of Portfolio Companies Add Value Besides Money?*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 216, 221-22 (1989); Joseph Rosenstein et al., *How Much Do CEOs Value the Advice of Venture Capitalists on their Boards?*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 238, 241 (1990).

173. See, e.g., Bernard S. Black & Ronald J. Gilson, *Venture Capital and the Structure of Capital Markets: Banks Versus Stock Markets*, 47 J. FIN. ECON. 243, 254-55 (1998) (discussing the role of venture capitalists in certifying the quality of the company undergoing an IPO).

174. See, e.g., Gorman & Sahlman, *supra* note 160, at 236-37 (survey study in which venture capitalists described their contributions as helping to obtain: new financing, further strategic planning, more management recruits, additional operational planning, new customers and suppliers, and resolution to compensation issues); Ian C. MacMillian et al., *Venture Capitalists' Involvement in Their Investments: Extent and Performance*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH 303, 310 (1988) (empirical study finding that venture capitalists act as a sounding board for the entrepreneur team, help in obtaining alternative sources of equity and debt financing, act as an intermediary with the rest of the investment group, and monitor financial performance); Tyebjee & Bruno, *Model of Venture Capitalist*, *supra* note 20 (finding that the primary roles played by venture capitalists with regard to the venture, aside from providing funds, include assisting the entrepreneurs in recruiting managers, providing business advice, and acting as a sounding board for the entrepreneurs).

policies.¹⁷⁵ Venture capitalists, however, leave most of the day-to-day running of the venture to the entrepreneur.¹⁷⁶

b. Characterization in Venture Capitalists' Written Sales Pitch: We Are "Partners"

An entrepreneur's beliefs regarding the relative role of the parties are shaped, in part, by the promotional literature used by venture capitalists to sell themselves to entrepreneurs. This literature paints venture capitalists as not just providers of funds but as joint venturers or partners of the entrepreneur, who, among other things, will provide various types of services and expertise. The following are examples from the marketing material of some well-established venture capital firms:

Menlo Ventures: "We view ourselves as business partners with our entrepreneurs" ¹⁷⁷

Hummer Winblad: "We believe that venture partners must think and act as if they were hired by the management team. We're ready to take on assignments and work on behalf of the CEO." ¹⁷⁸

IVP: "[W]e believe that funding a new company is not just a financial exercise. We are not simply board members or part owners. With every investment we make, we fundamentally believe that we are

175. See, e.g., Hellmann & Puri, *supra* note 19, at 170-71.

176. See MacMillian et al., *supra* note 174, at 311 (empirical study finding that the activities in which venture capitalists were least involved included selecting vendors and equipment, developing production or service techniques, and developing actual products or services).

177. Menlo Ventures, *Philosophy*, at <http://www.menloventures.com/philosophy.html> (last visited Jan. 18, 2002); see also Redpoint Ventures, *For Entrepreneurs: Frequently Asked Questions*, at <http://www.redpoint.com/index.htm?action=view&oid=178> (last visited Feb. 2, 2002) ("Redpoint typically takes an active role in the companies it funds, assisting with recruiting, strategy, partnerships, technology and future financing. We believe in a team approach."); *infra* note 204 and accompanying text.

178. Hummer Winblad Venture Partners, *Helping You Win: Investment Partnerships*, at <http://www.humwin.com/helpwin.htm> (last visited Jan. 18, 2002). This site also states that:

At Hummer Winblad Venture Partners, when we commit to an investment, we commit much more than just money. It is our philosophy that venture partners should also contribute their collective expertise, be consistently accessible, and be guided by the fundamental belief that the investor's role is to enhance, not interfere with, successful operations. We have the knowledge and experience to help you succeed.

Id.

going into business with the entrepreneurs.”¹⁷⁹

In summary, the venture capitalist presents itself as a consultant, confidante, and a friend who is willing to help inexperienced entrepreneurs turn their ideas into reality.¹⁸⁰

3. SUMMARY

As mentioned above, beliefs are constructed, in part, from the facts about the world as perceived and processed by an individual. In the venture capital context, an entrepreneur acquires facts regarding the contractual context from a variety of sources. A principal source of these facts is the venture capitalist. To the extent that the venture capital script—for example, the founder’s disease script and that regarding the relative role of the parties—is partially obscured through omission, “puffery,” or affirmative misrepresentations, the divergence of an entrepreneur’s original expectations will increase, as her beliefs will fail to properly track true facts about the contractual context.

As we will see in the following Section, the manner by which an entrepreneur collects and interprets facts about the contractual context, as well as the way that she uses these facts to construct her beliefs and plans, will be affected in significant ways by the tendency of entrepreneurs to be over-optimistic.

E. Divergent Original Expectations and Entrepreneurial Over-Optimism: An Exacerbating Factor

This Section presents some of the empirical findings on the tendency of entrepreneurs to be over-optimistic. Over-optimism will increase the probability that the original expectations of an entrepreneur will diverge from the true facts about the contractual context. According to various studies, managers generally believe that “risk is manageable”¹⁸¹ and that they can control it.¹⁸² This belief leads them to

179. IVP, *So What Makes IVP Different?*, at http://www.ivp.com/about/about_working.html (last visited Jan. 18, 2002).

180. See Donald C. Langevoort, *Selling Hope, Selling Risk: Some Lessons for Law from Behavioral Economics About Stockbrokers and Sophisticated Customers*, 84 CAL. L. REV. 627, 637-41 (1996) (discussing the analogous role played by brokers in assisting potential investors to purchase overly risky securities, where investors may come to see the stockbroker as a confidante and friend, forgetting the potential conflicts in their interests).

181. See James G. March & Zur Shapira, *Managerial Perspectives on Risk and Risk Taking*, 33 MGMT. SCI. 1404, 1410 (1987) (managers surveyed believed that the

be over-optimistic and to pay less attention to statistical information that could be relevant to their decision-making.¹⁸³ A number of studies, however, have shown that entrepreneurs tend to be more over-optimistic than professional managers and non-entrepreneurs.¹⁸⁴ “[E]ntrepreneurs, whether well prepared or not, may experience ‘entrepreneurial euphoria,’ in which they feel they must succeed and then assess their odds accordingly.”¹⁸⁵

1. GENERAL EVIDENCE OF OVER-OPTIMISM

One study found that “[e]ntrepreneurs perceive their prospects for success as substantially better than those for similar businesses” and that “[e]ntrepreneurs’ perceptions of their own chances for success do not seem to be systematically related to factors which previous research suggests might be associated with success.”¹⁸⁶ The entrepreneurs were asked two questions: (1) “What are the odds of *your business succeeding?*” and (2) “What are the odds of *any business like yours succeeding?*” The entrepreneurs were asked to choose odds ranging from zero chance in ten, with ten being a perfect chance at success. The following summarizes the results:

- 95% of the entrepreneurs believed the odds of success of *their business* to be at least five in ten, as opposed to a

situations they faced involved risk-taking, where managerial skill and information can reduce the uncertainty, and “not gambling,” where the odds are uncontrollable and produced by outside factors), *reprinted in* JAMES G. MARCH, *DECISIONS AND ORGANIZATIONS* 76 (1988).

182. *Id.* (75% of managers in a survey carried out by Shapira saw “risk as controllable”).

183. *Id.* at 1410-11.

184. *See, e.g.,* Gaylen N. Chandler & Erik Jansen, *The Founder’s Self-Assessed Competence and Venture Performance*, 7 *J. BUS. VENTURING* 223 (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 et al., *Entrepreneurs’ Perceived Chances for Success*, 3 *J. BUS. VENTURING* 97 (1988); Norris Krueger, *The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability*, 18 *ENTREPRENEURSHIP THEORY & PRAC.* 5, 13 (1993); March & Shapira, *supra* note 181, at 1410 (quoting a successful high-tech entrepreneur: “In starting my company I didn’t gamble; I was confident we were going to succeed.”); Daniel M. Spitzer, Jr. et al., *Business Planning in New, High Technology Firms*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 398 (1989).

185. Cooper et al., *supra* note 184, at 107.

186. *Id.* at 106.

belief that only 78% of *any business like theirs* had odds of success of at least five in ten.

- 81% perceived the odds of success of *their business* to be at least seven in ten, as opposed to 39% of *any business like theirs*.
- 55% perceived the odds of success of *their business* to be at least nine in ten, as opposed to 16% of *any business like theirs*.
- 33% perceived the odds of success of *their business* to be a perfect ten out of ten, as opposed to 11% of *any business like theirs*.¹⁸⁷

This study shows that the entrepreneurs are far more confident in their business succeeding than a business like theirs succeeding.

Moreover, the study also found that an entrepreneur's belief as to the chances that her venture would succeed showed little correlation to "objective predictors" such as college education, prior supervisory experience, and initial capital.¹⁸⁸ The authors concluded that entrepreneurial actions did not comport with the rational choice model, but were better explained by the cognitive literature on overconfidence.¹⁸⁹

187. *Id.* at 103.

Odds of Success	Your Business	Any Business Like Yours
5 out of 10 (or better)	95 %	78 %
7 out of 10 (or better)	81 %	39 %
9 out of 10 (or better)	55 %	16 %
10 out of 10	33 %	11 %

188. *Id.* at 105.

189. *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. See Spitzer et. al, *supra* note 184, at 400, 404-05. In the former survey, respondents estimated *their* chances for success to be 74.1%, on average. *Id.* at 405. On the other hand, they estimated the chance of success for *a business like yours* to be 43.3%, on average. *Id.*; see also Krueger, *supra* note 184, at 13 (finding similar results as the Cooper et al. study regarding the general over-optimism of entrepreneurs).

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, by the way she frames and interprets the facts, perceives the venture as being less risky.¹⁹⁰

2. OVERCONFIDENCE AND UNDER-INVESTMENT BY ENTREPRENEURS IN INFORMATION SEARCHES

A study of information-gathering patterns of new entrepreneurs in 1,176 ventures found that entrepreneurs are less likely to acquire information relevant to the venture.¹⁹¹ The study analyzed the extent to which entrepreneurs in the process of forming a new venture acquire and use information from professional experts such as accountants, lawyers, and bankers. The study found that (1) entrepreneurs without prior experience sought information from friends, family, and other business owners, but, surprisingly, did not seek much information from experts;¹⁹² (2) experienced entrepreneurs going into business in areas very different from the prior venture were less likely to seek new information, showing a degree of overconfidence;¹⁹³ and (3) the more

190. For example, Palich and Bagby found that entrepreneurs categorize equivocal business scenarios more positively than did other subjects: "greater strengths versus weaknesses, opportunities versus threats, and potential for future performance improvement versus deterioration." Leslie E. Palich & 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 ENTREPRENEURSHIP RESEARCH, 659, 670 (1986) (survey of over 1,000 entrepreneurs or individuals who 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).

191. See Arnold C. Cooper et al., *Entrepreneurial Information Search*, 10 J. BUS. VENTURING 107 (1995).

192. *Id.* 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").

193. Cooper et al., *supra* note 191, at 115.

confident¹⁹⁴ the entrepreneurs, the less likely they were to seek information, particularly from professionals.¹⁹⁵ The authors conclude that overconfidence blinds entrepreneurs to the need for more information.¹⁹⁶

Additionally, new entrepreneurs are more likely to be at an informational disadvantage than are venture capitalists, given the newness of the transactional environment¹⁹⁷ and the relevant types of information,¹⁹⁸ as well as their lack of prior contact with clients, financiers, lawyers, and other professionals.¹⁹⁹ They may not know what type of information to acquire or what questions to ask—in short, they may be ignorant about the parameters of the problem that they are trying to solve. Moreover, they may have little experience dealing with complex contracts, such as venture capital contracts.²⁰⁰

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

195. *Id.* at 117.

196. *See id.* at 118. The study did find that in larger, more complex ventures, the entrepreneurs did seek some expert advice. *Id.*

197. 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. *See, e.g.,* Langevoort, *supra* note 180, at 637-41 (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).

198. *See generally* Lord & Maher, *supra* note 154 (discussing several types of informational processing risks). A decision-maker trying to determine how to act will have certain information to guide her. She will also have certain beliefs about the veracity of that information, as well as beliefs about the potential uncertain outcomes of her decision. She will usually have to make the decision and act before she can gather enough information to verify her beliefs. In other words, in deciding how to act, the decision-maker will not know which of various possible states of the world will come to be. She will have to act in the face of this risk, the risk that the final outcome will not be what she expected or wanted. This is a fact faced by any decision-maker without complete information about what will occur in the future. Some decision-makers will be willing to take more risks, while others are more risk averse and may decide not to act or wait until the future becomes clearer and until some of the risk has disappeared.

199. *See, e.g.,* Ken G. Smith et al., *Organizational Information Processing, Competitive Responses, and Performance in the U.S. Domestic Airline Industry*, 34 *ACAD. MGMT. J.* 60, 78 (1991) (arguing that managers with an external orientation and outside experiences are more efficient in gathering and processing a wider array of information than are managers with an internal orientation).

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

III. FROM COMFY CHAIR TO INQUISITION: THE REALIZATION BY THE ENTREPRENEUR OF HER DIVERGENT ORIGINAL EXPECTATIONS

The high-powered incentives and control mechanisms found in venture capital contracts will undoubtedly provide entrepreneurs with important facts about the contractual context. However, some of the true facts about the contractual context remain hidden behind legalese and the venture capitalist's assurances that these complicated contracts are just aimed at keeping the lawyers happy.²⁰¹ Even an entrepreneur who carefully reads the agreements would at the very least come away with mixed expectations about the nature of the bargain.²⁰² This is because, at the time of negotiation, when the entrepreneur is being courted, the signals being sent to her by the venture capitalist are very different—"we are your partners," "we are a team," and "we only succeed if you succeed."²⁰³ The venture capitalist assures the entrepreneur that it is providing more than just money and that they are providing advice and a network of contacts.²⁰⁴

201. 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 lawyers).

202. For one thing, as we will see below, actual venture capital contracts are very incomplete, and, in essence, give the venture capitalist a great amount of power to make or modify the rules of the game as new contingencies arise; that is just part of the nature of the relational contracts that the parties entered into. See, e.g., Victor P. Goldberg, *Price Adjustment in Long-Term Contracts*, 1985 WIS. L. REV. 527; Hadfield, *supra* note 20 (discussing the relational nature of long-term franchise contracts and the various repercussions of their incompleteness); 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 Classical, Neoclassical, and Relational Contract Law*, 72 NW. U. L. REV. 854 (1978).

203. See *supra* Part II.D.2.b for a discussion of the way in which the nature of the relationship is presented to entrepreneurs in the venture capital promotional literature.

204. For example, the venture capital sales literature underlines the importance of the network of contacts that particular firms provide. See, e.g., Draper Fisher Jurvetson, *Investment Philosophy*, at http://www.dfj.com/about/about_philosophy.html (last visited Jan. 22, 2002). "Friends, partners and industry contacts are our most valuable resources. Our development of a 'value-added' network of Limited Partners is a powerful resource we can bring to bear in our efforts to help our portfolio companies succeed, and is instrumental in maintaining our excellent deal flow." *Id.* Another company states:

What is The Network Effect? The Network Effect applies the increasing returns model to the practice of venture capital. We believe that each member of our network—a Redpoint partner, an entrepreneur-in-residence, a

The issue is not that venture capitalists do not provide some or all of these services at some point in the venture. The problem is that the way the venture capitalist provides these services affects the way an entrepreneur frames her beliefs and attendant expectations. As we saw above, venture capitalists and entrepreneurs have highly incongruous understandings of critical aspects of the transaction.

*A. Effects of Entrepreneurial Over-Optimism:
Contracting, Living, Learning*

At one level, entrepreneur over-optimism provides a positive externality to the rest of society, since it encourages cadres of entrepreneurs to carry out their endeavors even when the probability of positive returns is very low.²⁰⁵ While over-optimism may help an entrepreneur during the process of innovation, it is a great liability at the time of bargaining with venture capitalists. Over-optimism can lead an entrepreneur to enter into contracts that do not reflect the actual risks involved in the venture.²⁰⁶ For example, she might underestimate the

portfolio company, a service firm or a strategic partner—increases the value of the network to all other members. We mobilize the resources of the entire Redpoint family to make our portfolio companies successful, to make the whole network more valuable than the sum of its parts. With each success, the value of the network grows exponentially, creating a virtuous circle and breeding more success. We build out our network strategically, in order to fuel this virtuous circle and generate maximum returns for all involved.

Redpoint Ventures, *Delivering the Network Effect*, at <http://www.redpoint.com/index.htm> (last visited Jan. 22, 2001). Similarly, Brentwood Venture Capital, *About Brentwood*, at <http://www.brentwoodvc.com/about.html> (last visited Jan. 22, 2002) provides:

At Brentwood, we partner with talented entrepreneurs and help them succeed by backing them with a depth and breadth of operational experience that few venture capital firms can match. Entrepreneurs choose to work with Brentwood because we bring value to their businesses and support them with the resources of the entire Brentwood team, including our breadth of industry and strategic contacts. Entrepreneurs trust Brentwood both as a partner committed to building world-class companies and as a valuable resource capable of turning business vision into reality.

Id.

205. See, e.g., Fritz Machlup, 3 *THE ECONOMICS OF INFORMATION AND HUMAN CAPITAL* 165-67 (1984) (arguing that society would benefit, for example, from the “socially wholesome illusion” produced when an innovator is over-optimistic regarding the lag time between his innovation and imitation of that innovation by others).

206. See, e.g., Melvin A. Eisenberg, *The Limits of Cognition and the Limits of Contract*, 47 *STAN. L. REV.* 211, 227 (1995) (arguing that the justification for special scrutiny of liquidated-damages provisions is not that they are “specially amenable to

probability of venture capitalist misbehavior.²⁰⁷ Even if an over-optimistic entrepreneur fully understands the onerous provisions in a venture capital contract, she would not be very worried, believing that events that would trigger such negative provisions will not come to be.²⁰⁸

However, during the life of the venture, as negative states of the world trigger onerous provisions in venture capital contracts, the entrepreneur's original over-optimistic expectations will come into contact with brusque facts about the true nature of the contractual context.²⁰⁹ As the venture progresses and the entrepreneur becomes more cognizant of the risks associated with venture capital contracts, one should expect her to take action to protect her investment. In a sense, venture capitalist-financed ventures 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.²¹⁰

advantage taking and oppression, but that such provisions are systematically more likely to be the products of the limits of cognition than . . . terms that specify the performance each party is to render").

207. *See generally id.* at 249 (arguing against allowing general waivers of the duty of loyalty, in part due to the fact that "the beneficiaries would likely be unduly optimistic about the extent to which the manager would deal fairly despite the lack of fiduciary restraints").

208. *See supra* Part II.E.1 for a discussion of how over-optimistic entrepreneurs perceive their chance of success as being greater than that of similarly situated entrepreneurs in analogous ventures.

209. Some studies have shown that entrepreneurs initially tend to give undue weight to potential internal risks as opposed to external ones, but then slowly become more cognizant of external risks as they gather more experience and become exposed to their negative effects. *See* William D. Guth et al., *Cognition, Enactment and Learning in the Entrepreneurial Process*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 242 (1991); Carolyn Y. Woo et al., *Experimentation and Performance in Start-Up Firms*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 306 (1991).

210. 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 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).

B. Learning by Being Done to: From Innocent Application of High-Powered Incentives to Venture Capitalist Opportunism

There are a number of potential triggers that can lead entrepreneurs to become increasingly cognizant, after the fact, of their false beliefs and expectations regarding the bargain struck with the venture capitalist. These include the exercise by the venture capitalist, over time, of the various high-powered incentives described in Part I. Each time that these high-powered incentives become relevant and each time that a venture capitalist exercises its control prerogatives, the entrepreneur will come to know true facts about the contractual context.

1. NON-OPPORTUNISTIC TRIGGERS: BECOMING COGNIZANT OF DIVERGENT ORIGINAL EXPECTATIONS

There are several events and actions that can lead an entrepreneur to recognize that her original beliefs poorly track true facts about the contractual context, such as: (1) exposure to the staged financing mechanism; (2) realization by the entrepreneur of the founder's disease script; (3) operation of back-end loaded compensation schemes—e.g., worthless stock options; and (4) the triggering of anti-dilution provisions (which are part of the venture capitalist's convertible preferred stock). As mentioned above, ratchet down anti-dilution provisions can effectively wipe out an entrepreneur's whole equity stake.²¹¹ As one commentator put it: "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 founders are talking about dilutive financing and a Full Ratchet provision."²¹²

2. ENTREPRENEURIAL LEARNING MOTIVATED BY VENTURE CAPITALIST OPPORTUNISM

While the control-incentive mechanisms adopted by venture capitalists play an important role in protecting their investment, they

211. Daniel P. Finkelman, Testa, Hurwitz & Thibeault, LLP, *The Risks of "Wash Out" Financings: Avoiding Litigation Claims by Diluted Founders*, at <http://www.tht.com/pubs/SearchMatchPub.asp?ArticleID=231> (Spring 1997) (last visited Mar. 11, 2002).

212. BARTLETT, *supra* note 58, at 176.

also give venture capitalists great leeway to act opportunistically.²¹³ The argument regarding potential venture capitalist opportunism is analogous to the argument in Part I regarding potential opportunism by an entrepreneur. Entrepreneurs make transaction-specific investments when they acquire firm-specific human capital, when they assign their intellectual property rights to the innovation to venture capitalist-controlled ventures, and when they agree to receive the bulk of their compensation once the venture has succeeded. Knowing this, venture capitalists can threaten to fire entrepreneurs or use some other form of leverage to appropriate a greater share of any potential surplus. This is a classic opportunism scenario.

a. Staged Financing and Potential Opportunistic Behavior

Venture capitalists can use staged financing to apply financial pressure to entrepreneurs, allowing the venture capitalist, in theory, to act opportunistically, capturing part of the quasi-rents otherwise accruing to the entrepreneur.²¹⁴ Generally, high-tech start-ups need a steady source of financing in order to finish the innovation, test it, brand it, and bring it to market. Knowing this, a venture capitalist can either threaten not to fund any more stages or wait until the venture's working capital is running low or exhausted—that is, the “burn date”—in order to coerce the entrepreneur into giving the venture capitalist a larger portion of the venture's surplus. In fact, venture capitalists often wait until close to the burn date before committing to a new round of financing. One reason that venture capitalists can apply such pressure when a venture's funds are running low is that venture capital contracts generally give the venture capitalist a monopoly over future financing and a veto over whom else can provide funds.²¹⁵

213. 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 venture capitalists to act opportunistically if so inclined.

214. See Sahlman, *supra* note 3.

215. 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 Bruno et al., *supra* note 56, at 689. Moreover, potential outside investors will be hesitant to invest unless the current venture capitalist is also providing new funds, given that the current venture capitalist, as an insider, has better information regarding the true state of the venture. The reluctance of the current venture capitalist to invest in a new stage will send a negative signal to other potential investors regarding the general viability of the venture. This dynamic boils down to a typical adverse selection problem.

b. A Venture Capitalist's Control Over "Exit": The Potential for Opportunistic Behavior

As we saw in Part I, in order to alleviate a venture capitalist's illiquidity hazard, venture capital contracts give the venture capitalist the ability to liquidate the venture or to sell it through a private sale or initial public offering.²¹⁶ This is one area where venture capitalists' and entrepreneurs' interests often come into conflict—that is, where an entrepreneur can perceive unfairness that will lead her to take retaliatory or defensive action.

First, let us examine the issue of venture liquidation. Entrepreneurs rarely welcome a liquidation of the venture, even if the venture is not performing well, since they lose their employment and the possibility of seeing their innovation reach the market. By the same token, venture capitalists sometimes liquidate otherwise viable and profitable firms because the returns are not what they (or the fund investors) expected.²¹⁷ For example, given the other firms in its investment portfolio, a venture capitalist, may liquidate an otherwise viable but weaker firm because the marginal return of spending limited resources and time on that one firm may not be worth the venture capitalist's effort, despite the fact that if the venture capitalist were analyzing that firm independently, it would choose not to liquidate.²¹⁸ In

216. See Gompers, *supra* note 37, at 1463-64. Gompers describes a study by Venture Economics of returns to venture capitalists in 1988 which found that venture capitalists that exited through IPOs received an average return of 59.5% per year (7.1 times the invested capital returned over 4.2 years); venture capitalists that exited 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); and venture capitalists that exited by liquidating the portfolio company lost 80% of their value over a period of 4.1 years. *Id.*

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

218. See Sahlman, *supra* note 3, at 507 & n.12. 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." *Id.* at 507. While shutting down otherwise viable firms may appear to be economically irrational, it makes perfect economic sense when viewed from the venture capitalist's need to allocate its time and resources among various ventures. *Id.* "Although the individual company 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." *Id.* at 507 n.12; see also John C. Ruhnka & John E. Young, *A Venture Capital Model of the Development Process for New Ventures*, 2 J. BUS. VENTURING 167 (1987) (describing

a related vein, venture capitalists are often wary of being stuck with what are sometimes labeled the “living dead,” firms that are producing a profit, but not a high enough one to provide the venture capitalist with the ability to “exit” within the time period that they had expected.²¹⁹

With respect to non-liquidating venture capitalist exits, entrepreneurs generally prefer an IPO over a sale to a third party, which can result in changes in the entrepreneur’s responsibilities and stature, the loss of innovative freedom, and in some instances, loss of employment.²²⁰ While both parties generally prefer an IPO, they may have different preferences as to its timing. There is empirical evidence showing that venture capitalists sometimes carry out IPOs prematurely—that is, they exit at a time when postponing exit to a later date would have led to a higher price or a higher probability of post-IPO survival. A venture capitalist would do so in order to “grandstand”—that is, to send a signal to potential investors in new venture capital partnerships created by the same venture capitalists.²²¹ Too rapid a development of the venture can create contractual risks to the entrepreneurs: for example, one empirical study found that founders get fired with more frequency the faster the venture grows.²²²

One of the arguments in this Article is that even if we assumed that during the life of the venture the venture capitalist never acted opportunistically, it does not matter. The retaliation and self-preserving strategic behavior described below is a function of the divergent original expectations of the entrepreneur, which may be a product of such things

the common strategy of “parlaying of funding,” the venture capitalists, practice 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).

219. See Ruhnka et al., *supra* note 55, at 137 (empirical study finding that approximately 20.6% of sample would end up as “living dead”).

220. See Lisa Vincenti, *Venture-Backed M&A Surge Expected*, VENTURE CAPITAL J., Oct. 1994, at 38-39 (discussing the use of mergers and acquisitions as an exit mechanism for venture capitalists and the potential threat they pose to founders). “Maintaining control—not to mention their jobs—also is critical to many executives, who often see these threatened by mergers.” *Id.*

221. See Paul A. Gompers, *Grandstanding in the Venture Capital Industry*, 42 J. FIN. ECON. 133 (1996).

222. 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, 101-02 (1989); George C. Rubenson & Anil K. Gupta, *The Founder’s Disease: A Critical Reexamination*, in FRONTIERS ENTREPRENEURSHIP RES. 167, 177-78 (1990) (empirical study finding that if a venture grows slowly and the founder is “capable of some adaptation,” a venture can become “quite large before the initial succession is necessary”).

as entrepreneurial over-optimism. However, since venture capital contracts give venture capitalists ex post bargaining power, unless we assume the existence of very robust reputational markets, venture capitalists will be able to act opportunistically.²²³

223. Reputational arguments face important hurdles in the venture capital context. For reputation to be a viable constraint on venture capitalists, other potential entrepreneurs must be able to observe the occurrence of the opportunistic behavior (or receive a reliable signal of it), and be able to react to the information. Entrepreneurs, however, face significant informational constraints, both in identifying potential sources of financing, and in finding entrepreneurs with credible information about their prior dealings with a venture capitalist. A venture capitalist usually determines the criteria used when firing an entrepreneur or liquidating an investment, and these criteria are often vague. An outsider trying to determine whether a dismissal or liquidation was opportunistic will have to distinguish opportunism from random shocks affecting the firm, a particular concern in the firms that concern us, with their high variance between success and failure. Even if reputational constraints are robust, there are social costs when an improperly fired entrepreneur loses property rights to her innovation and loses all or most of her equity investment. See generally David Charny, *Nonlegal Sanctions in Commercial Relationships*, 104 HARV. L. REV. 373, 419-20 (1990). The existence of short-horizon problems caused by highly volatile environments also helps dull the restraining effects of reputation. Because of staged financing and the fact that entrepreneurs will not usually be repeat players with the same venture capitalists, venture capitalists will face numerous situations where they can achieve a higher one-time return by acting opportunistically than by continuing the relationship. For an analogous situation in which reputational effects were dulled by short-horizon problems, see EDWARD C. GALLICK, *EXCLUSIVE DEALING AND VERTICAL INTEGRATION: THE EFFICIENCY OF CONTRACTS IN THE TUNA INDUSTRY* (1984).

It should be noted that at the other end of the spectrum a venture capitalist may want to acquire a reputation for toughness and for giving little slack to the entrepreneur in order to signal to investors in venture capital funds that they are not colluding with the entrepreneurs. On the issue of collusion within organizations, see generally Jean Tirole, *Collusion and the Theory of Organizations*, in 2 *ADVANCES IN ECONOMIC THEORY: SIXTH WORLD CONGRESS* 151 (Jean-Jacques Laffont ed., 1992). Holmstrom argues that the potential within a large firm for collusion between the monitor of an entrepreneur and the entrepreneur is one reason why small firms have a comparative advantage in innovating. See Holmstrom, *supra* note 27, at 320-23. Another reason that a venture capitalist wants a reputation for toughness is that entrepreneurs in other firms within the portfolio will react to the reputation. These other entrepreneurs are already locked into venture capital contracts so that even if the venture capitalist signals its "toughness" through opportunistic behavior, the other entrepreneurs will not be able to react by exiting. In fact, what this means is that opportunistic behavior by a venture capitalist vis-à-vis one entrepreneur can have a ripple effect reaching entrepreneurs in other portfolio firms, and leading to an increase in the mis-incentives this Article has identified. However, acquiring this reputation for toughness only increases the probability that the entrepreneur will deem the venture capitalist's actions as "unfair" and decide to retaliate.

The contractual power granted to venture capitalists by standard venture capital contracts is analogous to the contractual power enjoyed by franchisors pursuant to

IV. EX POST BARGAINING INEFFICIENCIES: FROM COORDINATION TO PRISONER'S DILEMMA TO RETALIATION

This Article claims that the level of divergence of the entrepreneur's original expectations matters, since it can cast a shadow affecting venture capitalist-entrepreneurial relationships during the life of the venture. There are two principal types of actions that one would expect the entrepreneur to take once she becomes aware of the true facts regarding the contractual context and becomes cognizant that her divergent original expectations exposed her to unforeseen contractual risks.

First, one would expect that she would take strategic self-preserving actions to reduce the risks associated with contractual hazards.²²⁴ Second, to the extent that the entrepreneur characterizes the venture capitalist's actions leading to the divergent original expectations as "unfair," I will show that under certain behavioral assumptions, the entrepreneur will have an incentive to retaliate against the venture capitalist, even if doing so comes at a cost to the entrepreneur.²²⁵

standard franchising contracts. As in the venture capital context, the original literature on franchise contracts placed great weight on reputation as a constraint on ex post opportunism. More recent studies in the franchise literature are split on whether reputation is an effective constraint. See, e.g., Hadfield, *supra* note 20, at 928. The franchising literature is split on whether reputation is enough of a constraint on franchisor opportunism. See Anthony W. Dnes, 'Unfair' Contractual Practices and Hostages in Franchise Contracts, 148 J. INSTITUTIONAL & THEORETICAL ECON. 484, 494-95 (1992). Dnes found, in a study of United Kingdom franchise contracts, that the agreements contain provisions to protect against franchisor opportunism, and:

[r]eputation may work well in the case of established franchisors. However, we note that it is unusual to rely on reputation in situations where there are significant franchise-specific investments We can regard reliance on reputation as part of the implicit contract. However, most franchisors in this study prefer to make it clear in the agreement that they could not benefit from contriving reasons for termination.

Id.; Charles J. Goetz & Robert E. Scott, *Principles of Relational Contracts*, 67 VA. L. REV. 1089, 1148 (1981) (reputation as a constraint on franchisors); Benjamin Klein, *Transaction Cost Determinants of "Unfair" Contractual Arrangements*, 70 AM. ECON. ASS'N 356, 358-59 (1980) (arguing that reputation constrains franchisor opportunism).

224. See, e.g., Eric Talley, *Disclosure Norms*, 149 U. PA. L. REV. 1955, 1956 (2001) (arguing that one party with superior information may act strategically to take advantage of that superior information, but that the other party may engage in strategic maneuvering to protect his interest).

225. See Hans Landström et al., *Contracts Between Entrepreneurs and Investors: Terms and Negotiation Processes*, in FRONTIERS OF ENTREPRENEURSHIP RESEARCH (1998), http://www.babson.edu/entrep/fer/papers98/XX/XX_C/XX_C_text.htm (last visited Mar. 11, 2002). The authors quote a venture capitalist who had previously been

These two types of strategic behavior will provide a deadweight cost that can be at least partially abated at the time of contracting.²²⁶ Making the venture capital script more transparent at the time of the bargain (that is, reducing the level of divergence of the entrepreneur's original expectations) would allow the entrepreneur to better value the transaction and make a more informed determination about whether to enter into the transaction. Put another way, the entrepreneur would make a better determination of how to allocate her human capital.²²⁷

This Part first discusses the incomplete nature of venture capital contracts and the allocation of ex post bargaining power to the venture capitalist. It then discusses how the intangible nature of the start-up's principal assets—including the entrepreneur's human capital—provides an entrepreneur with the ability to act during the life of the venture to protect her interests and to retaliate against the venture capitalists. Finally, I set forth the prisoner's dilemma and reciprocal fairness/retaliation models.

A. Incomplete Firm Contracts and Ex Post Venture Capitalist-Entrepreneurial Bargaining

Written venture capital contracts are incomplete,²²⁸ as is usually the case with contracts among participants in business firms. This

an entrepreneur on the importance of fairness in the transaction: "I try to find a deal which we both consider to be fair. That's my key concern because you need to get the goodwill of the entrepreneur. The worst thing is to have an entrepreneur who is accepting the deal . . . even though they are [sic] secretly resenting it." *Id.*

226. See, e.g., Harry J. Sapienza & M. Audrey Korsgaard, *Procedural Justice In Entrepreneur-Investor Relations*, 39 ACAD. MGMT. J. 544 (1996) (arguing that in venture capital-financed ventures, having an ongoing cooperative relationship between the entrepreneur and venture capitalist is important for the venture's success).

227. For example, if the entrepreneur was more cognizant of the true nature of the risks, she may choose not to form a start-up, and instead work in a less risky environment.

228. 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) the bargaining costs associated with negotiating and reaching an agreement regarding the governance contracts; and (3) the costs associated with the ability to write contracts that courts will be able to fully enforce. See HART, *supra* note 16, at 23. For a slightly different list of transaction cost-related constraints to complete contracting, see WILLIAMSON, *ECONOMIC INSTITUTIONS*, *supra* note 32, at 30 (also emphasizing 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*, Q. J. ECON. 1085 (1994) (describing the computational intractability problems

incompleteness leaves open the possibility that one or more of the parties will engage in costly ex post bargaining.²²⁹ From the point in time that the venture capitalist and entrepreneur come together in the initial funding, through the subsequent stages of funding, and the periods in between, they are engaged in explicit and implicit negotiation and renegotiation of the original bargain.²³⁰

As we saw in Part I, standard venture capital contracts give control over the venture to the venture capitalist.²³¹ That, coupled with the

when trying to write complete contracts).

229. See generally Luigi Zingales, *Corporate Governance*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 497, 498-99 (Peter Newman ed., 1998) (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); WILLIAMSON, *ECONOMIC INSTITUTIONS*, *supra* note 32, at 30-31 (arguing that if parties have unbounded rationality, they can reach a comprehensive bargain ex ante, and if parties are not opportunistic they can reach self-enforcing agreements).

230. One way to view the renegotiation of firm contracts is as the exception; that is, as what happens when there is some kind of organizational failure or crisis, or when some unforeseen outside occurrence takes place. Large, well-established companies, operating in a fairly stable environment probably fit this description the best. However, there is another way to approach the bargaining issue in business ventures. 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 (1995). In the venture capital context, the level of ex post bargaining will be greater than in more established manufacturing firms for various reasons. First, an entrepreneurial start-up by definition operates in a new environment, dealing with innovative goods, making it harder and more costly to identify ex ante many potential contingencies that will require renegotiation. Second, the environment is very volatile, in that outside shocks such as new entrants and changes in the IPO market can greatly affect the venture, once again putting the parties in a position to engage in ex post bargaining. Third, a start-up will have to undergo a series of rapid transformations, the pace and success of which are hard to anticipate ex ante and contract for effectively. Fourth, the highly intangible nature of the principal assets of startups—innovations and human capital—makes it hard to effectively contract ex ante, again making ex post renegotiation more likely. Finally, the very intangible nature of the assets, and particularly, the importance of the entrepreneur's human capital, makes it impossible to allocate all bargaining power to the venture capitalist since the venture capitalist's human capital is not contractible.

231. Among other things, the manner in which power is allocated within a firm can affect the incentives of parties to acquire human capital that is valuable to the firm but which loses some or all of its value if the transaction comes to an end (i.e., transaction-specific investments). A party will be less likely to make transaction-specific

high-powered incentives in the contracts, effectively grants the venture capitalist the great majority of ex post bargaining power.²³² This power differential notwithstanding, since the assets of venture capital-financed firms are highly intangible (mostly human capital and intellectual property), a venture capitalist's control over the venture will not provide it with as much power as it would have over a more traditional manufacturing firm with primarily tangible assets.²³³

investments if she knows that the other party can take actions that will threaten the value of the transaction-specific investment. See, e.g., WILLIAMSON, ECONOMIC INSTITUTIONS, *supra* note 32, at 52-56 (discussing asset specificity). In venture capital-financed firms, for example, the value of the venture can be increased if entrepreneurs acquire certain types of transaction-specific human capital. However, if the entrepreneur is fired or the venture capitalist decides not to continue funding the venture and it fails, the entrepreneur's transaction-specific human capital will lose some or all of its value. For an account of venture capitalist-entrepreneur relations that places principal emphasis on the control mechanisms used by venture capitalists, see GOMPERS & LERNER, *supra* note 3, at 139 (focusing on the use of staged financing as a control mechanism); Erik Berglöf, *A Control Theory of Venture Capital Finance*, 10 J.L. ECON. & ORG. 247 (1994); Hellmann, *supra* note 34; Josh Lerner, *Venture Capitalists and the Oversight of Private Firms*, 50 J. FIN. 301 (1995) (focusing on the fact that venture capitalists increase their control over the board of directors after a change in CEO); Neher, *supra* note 16; Sahlman, *supra* note 3, at 506.

232. Generally, ownership of a venture's tangible assets—those physical assets required for production—is a principal source of ex post bargaining power within a firm since it gives the owner the ability to exclude others from using the firm's physical assets needed for production. See Oliver Hart & John Moore, *Property Rights and the Nature of the Firm*, 98 J. POL. ECON. 1119, 1121 (1990). As Hart states, "the owner of an asset has *residual control rights* over that 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 16, at 30.

233. It is not surprising, therefore, that 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 34, at 57. 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. See Raghuram G. Rajan & Luigi Zingales, *Power in a Theory of the Firm*, 113 Q. J. ECON. 387, 387-88 (1998). Their theory acknowledges that access to physical assets creates power within firms. At the same time, they emphasize a second source of power: access to other critical, although intangible, firm resources (e.g., access to ideas, to customers, and to firm members with knowledge useful to others within the firm). The parties who get this access do not necessarily also get residual rights of control. What they do get is the chance to learn more about that idea, individual or team of individuals, or physical asset. As they do so, they become more valuable to the firm and less susceptible to the exercise of power by others in the firm. The firm, by providing this privileged access to agents, enhances the value of the agent's human capital, and the agent, by specializing, confers value to the firm. This specialized human capital becomes valuable given the

Also of critical importance will be the entrepreneur's ability to *manage* the timing of the acquisition and the transfer of information and knowledge.²³⁴ An entrepreneur can keep knowledge and information secret, manipulate it, distribute it, or use it to reduce the probability of getting fired, as we will see below.²³⁵ This will give her some bargaining leverage during the life of the venture.²³⁶ An entrepreneur is,

individual's ability to exit the firm at any time. Value is created through access and value is lost (to the firm, and possibly to the employee) once there is exit. In short, in trying to foster the agent's loyalty, the firm, in essence, "give[s] up power in order to get power." Raghuram G. Rajan & Luigi Zingales, *The Governance of the New Enterprise* 23 (Dec. 8, 1998) (unpublished manuscript, on file with author).

234. See, e.g., Landström et al., *supra* note 225 (citing evidence that entrepreneurs may manipulate information for strategic advantage and that tensions and conflicts often arise in the relationship between the entrepreneur and venture capitalist).

235. 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 at 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 earning guidances and warnings, among other things, to try to gradually change shareholder expectations.

236. The facts that (1) venture capital-financed high-technology firms are information and knowledge-intensive, (2) the information and knowledge primarily resides with entrepreneurs, and (3) in managing the day-to-day affairs of the venture the entrepreneur has access to customers and other critical firm participants, provide entrepreneurs with various sources of ex post bargaining maneuverability. Informational asymmetry problems and ex post verification problems (whether a court will be able to ascertain the true facts of the exchange) will also make it harder to purchase the information from the entrepreneur or know whether all the relevant information has been transferred. An entrepreneur's room to maneuver during the life of the contracts—i.e., her "power"—is influenced by the evolution of the venture's assets from intangible to tangible. While the venture's principal assets, such as human capital and intellectual property, remain intangible, an entrepreneur's threat to exit will be potentially more harmful to the venture capitalist, thereby giving the entrepreneur more leverage. Moreover, before an entrepreneur has transferred too much information and knowledge to the venture, any threat to exit is relatively credible, because she can take that information and knowledge with her to use in another venture. Non-compete and nondisclosure agreements will be harder to enforce the lower the level of information and knowledge transferred, because there would not be a clear baseline to define what belongs to the venture and what does not. As the level of the venture's tangible assets increase, the venture capitalist's leverage increases, given that venture capitalist ownership rights allow it to control access to the tangible assets necessary for production. Moreover, tangible assets can be sold, allowing a venture capitalist to more credibly threaten to liquidate the venture to 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 Gompers, *supra* note 37. As the venture reaches the manufacturing stage, the level of tangible assets increases (e.g., equipment used in the manufacturing process). These assets can be used as collateral to attract debt financing. Moreover, as the venture

of course, constrained by the fact that the venture capitalist will require certain levels of disclosure,²³⁷ but the entrepreneur will still have great leeway since knowledge about the extent of undisclosed information is within her control and because a lot of the knowledge is tacit knowledge that is difficult to transfer efficiently.²³⁸

B. *From Coordination Game to a Prisoner's Dilemma*

As mentioned above in Part II, maintaining ongoing coordination/cooperation behavior in heuristic-intensive firms, such as high-tech start-ups, will be particularly challenging, even under the best of circumstances. If the beliefs and plans formulated by the parties at the time of agreeing to the bargain fail to coincide in significant ways, then the parties may find it harder to continue to coordinate their actions during the life of the venture. In fact, the situation can turn from a coordination game where the parties are trying to coordinate their actions into, at the other end of the spectrum, a prisoner's dilemma game. A prisoner's dilemma game is one in which both parties would be better off agreeing to cooperate; however, the parties, for whatever reason, cannot reach an enforceable agreement to cooperate. At the same time, each party would be better off not being the only one to cooperate—that is, each party is better off defecting rather than cooperating if a party expects the other party to defect. In the Nash equilibrium, both parties defect, even though they both would be better off if they both cooperated.²³⁹

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 to raise working capital, see generally U.C.C. ART. 9.

237. *But see* Harry J. Sapienza & M. Audrey Korsgaard, *Performance Feedback, Decision Making Processes and Venture Capitalists' Support of New Ventures*, in *FRONTIERS OF 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, surprisingly it did not affect the decision by the venture capitalist about whether to commit more funds to the venture).

238. Tacit knowledge can be defined as "the knowledge of techniques, methods and designs that work in certain ways and with certain consequences, even when one cannot explain exactly why." Jaqueline Senker, *Tacit Knowledge and Models of Innovation*, 4 *J. INDUS. & CORP. CHANGE* 425, 426 (1995). For the classic treatment, see MICHAEL POLANYI, *THE TACIT DIMENSION* (1966). *See also* Ashish Arora, *Licensing Tacit Knowledge: Intellectual Property Rights and the Market for Know-How*, 4 *ECON. INNOVATION & NEW TECH.* 41 (1995).

239. *See generally* ERIC RASMUSEN, *GAMES AND INFORMATION: AN*

In order to see how the entrepreneur-venture capitalist relationship can go from an ongoing coordination game to a prisoner's dilemma, we start with the plausible assumption that since the venture capitalist and entrepreneur were able to agree to the original bargain, at that point in time, they both *believed* it was in their interest to cooperate. If the venture capitalist subsequently realizes that it was misinformed about the contractual facts within the entrepreneur's control, then the venture capitalist may defect—that is, put an end to the cooperation—by using its control over the venture to liquidate the venture or fire the entrepreneur.²⁴⁰ If the entrepreneur realizes that there is a high level of divergence in her original expectations, whether or not it is the venture capitalist's fault, then she may also defect by taking strategic action to protect her investment *ex post*. For example, she may fail to invest enough on transaction-specific human capital, she may retaliate against the venture capitalist even if it comes at a cost to her, or she may quit the venture.

If both parties defect, the start-up will not necessarily fail. In addition to liquidating the venture, the venture capitalist may defect by firing the entrepreneur, selling the venture to a third party, or refusing to provide any further funds. The entrepreneur's defections can include her quitting the venture, but more likely include undertaking other types of less drastic strategic action. However, those strategic actions by the entrepreneur will produce deadweight costs to the firm, and, in certain instances, can lead to the failure of an otherwise viable venture, either because it leads the venture capitalist to defect by liquidating the venture or because it increases the cost of doing business, putting the venture at a competitive disadvantage.

C. Reciprocity: Expectations, Fairness, and Retaliation

There is growing evidence of sabotage/retaliation by employees and other agents who perceive that their employer or principal is treating them unfairly.²⁴¹ A worker, for example, may be willing to engage in

INTRODUCTION TO GAME THEORY 16-18 (2d ed. 1994).

240. Depending on the nature of the misrepresentations, the venture capitalist may be able to resort to the representations and warranties in the stock purchase agreement.

241. See Gillian Flynn, *Why Employees Are So Angry*, WORKFORCE, Sept. 1988, at 26, 27 (in a 1998 survey of human resource professionals, 84% of respondents found increased employee hostility and 67% found that employees had unrealistic expectations); Daniel S. Hamermesh, *The Changing Distribution of Job Satisfaction*, 36 J. HUM. RESOURCES 1, 3 (2001) (finding that job satisfaction is tied to the expectations of the employees, with dissatisfaction increasing when their expectations are not borne

active sabotage or to take indirect actions, such as not exerting enough effort, even if the direct benefits of doing so are less than the costs.²⁴² More pertinent to the venture capitalist-entrepreneur relationship is evidence that sabotage and revenge by disgruntled high-tech employees is the number one source of attacks on corporate computer networks.²⁴³

For example, the 2000 *CSI/FBI Computer Crime and Security Survey* found that between 1997 and 2001, an average of approximately 84% of reporting companies listed “disgruntled employees” as the “likely sources of attacks” on their networks.²⁴⁴ The usual suspects, independent hackers, were second on the list, with an average of approximately 75% of the companies listing them as the likely source.²⁴⁵ The interesting thing about these statistics is that employee sabotage has been at about the same level for the last four years, so it is not just a function of the market crash and increased unemployment, although that undoubtedly has led to new entrants in the saboteur group.²⁴⁶

out).

242. See, e.g., Robert A. Giacalone & Paul Rosenfeld, *Reasons For Employee Sabotage in the Workplace*, 1 J. BUS. & PSYCHOL. 367 (1987); William Terris & John Jones, *Psychological Factors Related to Employees' Theft in the Convenience Store Industry*, 51 PSYCHOL. REP. 1219 (1982) (finding that revenge is one of the major motivators of employee theft).

243. See generally Computer Sec. Institute, *2001 Computer Crime and Security Survey*, <http://www.gocsi.com/prelea/000321.html> (last visited Feb. 4, 2002); Lori Enos, *Report: Cybercrime Outpacing Security Spending*, E-COMMERCE TIMES (Oct. 6, 2000), at <http://www.ecommercetimes.com/perl/story/4479.html>; Riva Richmond, *Fear of 'Layoff Rage' Pushes Firms to Act*, WALL ST. J. (2001), at <http://www.careerjournal.com/hrcenter/articles/20010615-richmond.html>.

244. See Richard Power, *2001 CSI/FBI Computer Crime and Security Survey*, COMPUTER SECURITY ISSUES & TRENDS, Spring 2001, at 1, 9, <http://www.www.gocsi.com>. The fear of this type of reaction was what led investment banks during the big cutbacks in the late eighties and early nineties to fire employees when they were out eating lunch: when an employee returned, she would find a pink slip on the door, her belongings outside her “old” office, and the lock changed. The reason for the inhumane treatment was to prevent the fired investment banker from getting on her computer with sabotage in mind. Of course, evolution is quick on Wall Street, so soon the order of business became “get take-out or get taken out.”

245. *Id.*

246. More recently, there has been a spate of lawsuits filed regarding stock options that had been granted to attract managers and employees to start-ups. See, e.g., Karen Alexander, *Lost Stock Options Give Rise to Suits Over Job Termination Compensation*, L.A. TIMES, Nov. 24, 2000, at C1, available at 2000 WL 25921358; Robert Kowalski, *As Options Spread, So Too Do Suits From Workers Fired Before They Vest*, THESTREET.COM (Mar. 15, 2000), at <http://www.thestreet.com/pf/tech/internet/900423.html>; Robert G. Kowalski, *Examples of Recent Litigation Concerning Employee Stock Options*, THESTREET.COM (Mar. 15, 2000), at <http://www.thestreet.com/tech/internet/900425.html>.

Real people seem to care about fairness much more than the rational actor of traditional economic theory. A number of economists, as well as legal academics, using the behavioral psychology literature, have made a very strong case for incorporating notions of "fairness" into analyses of legal-economic actors.²⁴⁷

1. VOLUNTARY PROVISIONS OF PUBLIC GOODS

One area in which fairness has been studied is the voluntary provision of public goods. For example, if I live on a street where all the houses face a small park overrun by weeds and beer cans, I can go into the park, clean it up and plant flowers and a vegetable garden, thereby increasing the value of my property *and* everybody else's property.²⁴⁸ Traditional economic wisdom would tell me that since everybody else is in the same position as I am, we would each have an incentive to free ride and wait for someone else to provide the public good. However, there is a large amount of literature, both in political science²⁴⁹ and in behavioral psychology²⁵⁰ showing that people routinely voluntarily provide such public goods, even though they are also providing an indirect benefit to others who can partake of the public good for free. Why? One answer is that individuals are acting altruistically.²⁵¹ Our main concern will not be with pure altruistic

247. See, e.g., Sally Blount, *When Social Outcomes Aren't Fair: The Effect of Casual Attributions on Preferences*, 63 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 131 (1995); Jolls et al., *supra* note 70, at 1489-96; Matthew Rabin, *Incorporating Fairness into Game Theory and Economics*, 83 AM. ECON. REV. 1281 (1993) [hereinafter Rabin, *Incorporating Fairness*]; Matthew Rabin, *Bargaining Structure, Fairness, and Efficiency* (Feb. 24, 1997) (unpublished draft, on file with author) [hereinafter Rabin, *Bargaining Structure*].

248. I am assuming that the city that owns the park has an ordinance that allows this type of action.

249. See generally RUSSELL HARDIN, *COLLECTIVE ACTION* (1982) (emphasizing the role of group size in overcoming collective action problems); TERRY M. MOE, *THE ORGANIZATION OF INTERESTS* (1980) (discussing the role of "political entrepreneurs" in overcoming collective action problems); MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION* (1971) (setting forth the problem of collective action and emphasizing the role of group size in overcoming such problems).

250. For an overview of the literature, see Matthew Rabin, *Psychology and Economics*, 36 J. ECON. LITERATURE 11 (1998).

251. The example usually provided is that of farmers around Ithaca, New York, who set fresh produce out on a table for passers by to take. They provide a box (fastened to the table) with a small opening for those who take the produce to compensate the farmers, which invariably people do. Whether the motivation of those placing money in the farmer's box is some form of altruism or has some other sort of

behavior, but rather with reciprocal actions undertaken in the shadow of (un)fairness.²⁵²

2. RECIPROCAL MOTIVATIONS: THE CONTEXT AND EXPECTATIONS OF FAIRNESS

It seems that individuals not only care about “fairness,” but also about the relational nature of fairness.²⁵³ In other words, our concerns about the value of fairness are embedded in a richer communal context, where we care not only about our actions—for example, whether to act altruistically—but we also care about the actions of others. This relational or reciprocal aspect of fairness extends not only to face-to-face interactions such as bargaining contexts, but also to our knowledge of the actions of anonymous individuals. In short, we care about the actions of others, their motivations in taking those actions, and their intentions.²⁵⁴ The relational aspect is captured by the fact that the *same individual* may (1) act altruistically toward those she perceives as deserving; (2) refuse to help those she perceives as undeserving; and (3) hurt or retaliate against those whom she perceives as having acted

explanation does not concern us. The main point is that, for some reason, individuals are not acting in the rational way assigned to them in the economic literature. See Robyn M. Dawes & Richard H. Thaler, *Anomalies: Cooperation*, 2 J. ECON. PERSP. 187, 195 (1988); see also Daniel Kahneman et al., *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, 76 AM. ECON. REV. 728 (1986) (studying the issue of fairness as a constraint on monopoly pricing).

252. See, e.g., ROBERT C. SOLOMON, *A PASSION FOR JUSTICE: EMOTIONS AND THE ORIGINS OF THE SOCIAL CONTRACT* 39-44 (1990) (arguing that revenge and vengeance arise from a sense of perceived unfairness and injustice); John H. Kagel et al., *Fairness in Ultimatum Games with Asymmetric Information and Asymmetric Payoffs*, 13 GAMES & ECON. BEHAV. 100 (1996); Sung Hee Kim & Richard H. Smith, *Revenge and Conflict Escalation*, 9 NEGOTIATION J. 37, 38-39 (1993); Vai-Lam Mui, *The Economics of Envy*, 26 J. ECON. BEHAV. & ORG. 311, 312 (1995) (exploring “the role of envy in provoking sabotage or retaliation against others” and stating that “envy plays an important role in social and economic life”).

253. See Rabin, *Incorporating Fairness*, *supra* note 247, at 1282, (arguing for two very plausible behavioral assumptions about individuals: (1) a willingness to sacrifice their own material well-being to help those who are being kind, and (2) a willingness to sacrifice their own material well-being to punish those who are being unkind); see also William Robert Nelson, Jr., *Do Unto Others: An Experimental Study of Expectations and Prospective Reciprocation* (n.d.) (unpublished manuscript, on file with author) (experiment finding support for Rabin’s reciprocating thesis).

254. See Rabin, *supra* note 250, at 21 (arguing that we have preferences over the consumption levels of other individuals and that they “depend on the behavior, motivations, and intentions of those other people”).

unfairly toward her.²⁵⁵

Returning to the park across the street, I may be more likely to pitch in and help if I see that others are also contributing.²⁵⁶ We do not have to reach a formal or informal agreement to divide the costs of providing the public good—a classical solution to overcoming the free rider problem.²⁵⁷ Instead, the fact that others are contributing may increase my inclination to reciprocate—to engage in a sort of “reciprocal altruism.”²⁵⁸ If a homeless person passes by, I may not care if he takes all of the tomatoes; if a neighbor who has not contributed at all to tending the garden tries to avail himself of a tomato, I may go right out and charge him for it. If, on the other hand, I perceive, after a while, that I am the only one tending the garden, I may refuse to continue providing these public goods to others. Again, my “altruism” is conditional and relational.

3. RECIPROCATING AGAINST PERCEIVED UNFAIRNESS

The intuition behind our urge to retaliate against perceived unfairness is much easier for us to grasp. Retaliation usually comes at a cost to those retaliating. The greater the cost associated with retaliation, the less likely that a party will retaliate. This, after all, was the idea behind mutually assured destruction, which provided deterrence to nuclear war.²⁵⁹ However, if the cost of retaliation is sufficiently low,

255. *Id.*

256. *See, e.g.,* Rabin, *supra* note 250, at 21 (discussing how individuals tend to conserve more water during droughts if they think that other people are also conserving); Livia Markoczy & Katherine Randazzo, *Utilitarianism and Fairness as Two Different Families of Motives for Cooperation* 9 (working paper, Feb. 14, 2002) (discussing literature showing that individuals are more likely to cooperate if they expect others to cooperate).

257. A traditional explanation given for why individuals provide public goods is that, if the group producing the public good is small enough, they can reach an agreement to share the costs associated with providing the public good. This would not require all beneficiaries of the public good to contribute (some will take a free ride). What it requires is a group small enough to allow for low transaction costs in reaching an agreement. *See generally* OLSON, *supra* note 249. For a discussion of the minimum size of the group required, see THOMAS C. SCHELLING, *Hockey Helmets, Daylight Saving, and Other Binary Choices*, in *MICROMOTIVES AND MACROBEHAVIOR* 211, 217-18 (1978).

258. *See* Rabin, *supra* note 250, at 21 (using the phrase “reciprocal altruism” to refer to this kind of behavior).

259. While Schelling’s *The Strategy of Conflict* is often used to illustrate the pre-commitment strategy behind nuclear deterrence, Schelling spends large portions of the book (Chapters 8–10 and Appendix A) illustrating the many problems with over-relying

then an individual may be willing to incur the cost. Back to my garden.²⁶⁰ Assume that the City of Cambridge Park Commissioner takes a liking to my garden and decides that, in order for him to continue to provide me with the permit required to use city property, I will have to give him one half of all tomatoes produced in the garden. One possible response is for me to “exit”—to say, “thanks but no thanks—I am giving up the garden.”

Another response is to engage in low cost retaliation. For example, I may give the Commissioner only puny or worm-infested tomatoes. Or I may just decide to give up on all tomato/flower planting and just plant grass—that is, turn the garden into a simple lawn. This comes at a cost to me—I much prefer the tomatoes and the tulips, but I also get some satisfaction in retaliating against what I perceive as the Commissioner’s unfair actions. In any case, I know that the Commissioner has overwhelming bargaining power, and I am not willing to reach a bargaining breakdown where the park returns to its prior unkempt ways. On the other hand, the Commissioner gets some benefit from having one fewer park to expend City resources on to beautify. Thus, he gives me the permit; he knows that I am retaliating against him, but the alternatives are worse. Certain inefficiencies creep into this whole process. I expend resources retaliating and neither the Commissioner nor I get what we wanted the most.

This just provides a rough and incomplete sketch, but gives some of the background on reciprocal fairness. In the next two sections I look at the issue a bit more formally and examine the literature dealing with retaliation to punish perceived unfairness. This literature was developed in part in an attempt to explain unexpected results in a series of experiments using the ultimatum game. So we begin by looking at the ultimatum game and then turn to various theories developed to try to account for the anomalies.

a. The Ultimatum Game

In the typical ultimatum game, two parties are to divide a sum of money. One party, the *Proposer*, moves first and proposes an allocation

on pre-commitment strategies as a form of nuclear deterrence. SCHELLING, *supra* note 55, at 187-266. For a less technical illustration of the issues involved, see generally DR. STRANGELOVE, OR: HOW I LEARNED TO STOP WORRYING AND LOVE THE BOMB (Columbia Pictures 1964).

260. For now, I will just refer to it as my garden and abstract away from the public goods issue discussed in the prior Section.

between her and the other party, the *Responder*. The Proposer's offer is a take-it-or-leave-it offer, which means that the Responder has two choices: accept the amount offered to her by the Proposer, or reject the offer. If she rejects the offer neither party gets any of the money. The game is played only once, so that there are no reputational effects to complicate matters. A rational Proposer in the ultimatum game will allocate only a very small amount to the Responder; the rational Responder would accept this offer. For example, if the Proposer offers to divide \$20.00 by giving \$0.10 to the Responder and keeping the rest, the Responder should take the \$0.10 since \$0.10 is more than nothing.

However, Proposers often allocated much larger shares to the Responder than economic bargaining theory would lead us to believe was the rational choice.²⁶¹ Often the splits offered by the Proposer are 50-50, and in a number of experiments they averaged 60-40 between Proposer and Responder.²⁶² A number of studies have shown that one can explain this unexpected result of the ultimatum game by taking into account the simple fact that Responders reject what they perceive to be "unfair" allocations.

When a Responder chooses to reject an allocation offered by the Proposer that is deemed "too small," she is willing to give up the proposed allocation and take nothing on the principle that it was, in her eyes, not "fair." Because she knows that if she rejects the Proposer's offer, the Proposer also gets nothing, she is, in essence, placing some value (the amount she foregoes) in the ability to retaliate against the Proposer for making an unfair offer.

b. The Sabotage Game

Rabin has shown how inefficiencies can arise in bargaining if we allow for the fact that a "person who is treated unfairly in bargaining will retaliate against the unfair party."²⁶³ As a result, when one party makes an unfair offer (whether it is unfair by any objective standard or is perceived as being unfair by the other party), the other party will tend

261. See Colin Camerer & Richard H. Thaler, *Anomalies: Ultimatums, Dictators and Manners*, 9 J. ECON. PERSP. 209 (1995); Werner Güth et al., *An Experimental Analysis of Ultimatum Bargaining*, 3 J. ECON. BEHAV. & ORG. 367 (1982); Werner Güth & Reinhard Tietz, *Ultimatum Bargaining Behavior: A Survey and Comparison of Experimental Results*, 11 J. ECON. PSYCHOL. 417 (1990); Richard H. Thaler, *Anomalies: The Ultimatum Game*, 2 J. ECON. PERSP. 195 (1988).

262. See Rabin, *Bargaining Structure*, *supra* note 247, at 1.

263. *Id.*

to take retaliatory actions that can lead to inefficient outcomes. To illustrate this, Rabin uses a "Sabotage Game," a variant of the ultimatum game in which the Responder, instead of getting the choice of rejecting the offer and receiving nothing (as in the ultimatum game) gets the choice to expend resources to retaliate against the Proposer.

For example, consider a Sabotage Game where the parties are to split \$20.00. The Proposer has two choices, either split it 50-50 (\$10.00, \$10.00)²⁶⁴ or keep \$18.00 for himself and \$2.00 for the Responder (\$18.00, \$2.00). Assume that retaliation or sabotage will cost the Responder \$0.10 and will impose on the Proposer a cost of \$3.00.

So if the Proposer offers the even split (\$10.00, \$10.00), the Responder has *two choices*:

1. *Sabotage*, which would leave the Proposer with \$7.00 and the Responder with \$9.90 (\$7.00, \$9.90), or
2. *Accept the offer*, which would leave the parties with an even split (\$10.00, \$10.00)

As a result, the Responder will choose *not* to sabotage, since she is better off with the \$10.00; in addition, the 50-50 offer comports with traditional notions of fairness.²⁶⁵

If, on the other hand, the Proposer offers an \$18.00, \$2.00 split, the Responder again has *two choices*:

1. *Sabotage*, at a cost of \$0.10 to her and \$3.00 to the Proposer (\$15.00, \$1.90), or
2. *Accept the offer* (\$18.00, \$2.00)

Rabin's argument is that, in this instance, a Responder who perceives the \$18.00, \$2.00 split as unfair will opt to get \$1.90 instead and punish the Proposer for the amount of \$3.00. Given the result in ultimatum games, where Responders routinely reject such one-sided offers, it would make sense that if given the opportunity, the Responder would

264. The first amount in the parentheses refers to the amount pertaining to the Proposer; the second number refers to that of the Responder.

265. That is why, while \$0.10 may not be accepted in an ultimatum game where the split was \$19.90/\$0.10, the \$0.10 here, given the 50-50 split, does not pose the issue of unfairness that led to the ultimatum game results.

retaliate against the unfair Proposer.

What allows for the results of the Sabotage Game is that it incorporates into the preferences of individuals the value derived from retaliating against unfair behavior by other parties.²⁶⁶ Retaliation may be a useful strategy in situations where the Responder does not want to walk away from a “cooperative” situation. For example, an employee, when confronted with an unfair offer made by an employer with bargaining power over her, may not be in a position to turn down the offer and quit (the equivalent of getting nothing in the ultimatum game). Instead she can engage in low-cost retaliation. A similar situation where the parties are locked into a relationship but may engage in low-cost retaliation is a divorce proceeding, where acrimony increases the urge to retaliate.²⁶⁷

c. Inefficiencies Illustrated by the Sabotage Game

More importantly, Rabin uses the Sabotage Game to underline how certain inefficiencies can crop into bargaining scenarios when low-cost retaliations are available. The costs associated with retaliation will be deadweight costs and may have broader social consequences. For example, when workers have relatively weak bargaining power they may resort to actions that will result in lower productivity.²⁶⁸ Inefficiencies arise because when the Proposer has sufficient bargaining power, he will knowingly choose to accept the other party’s retaliation.²⁶⁹ Under the Sabotage Game, the Proposer is better off offering an \$18.00, \$2.00 split, and losing the \$3.00 due to the Responder’s retaliation. This is because acting in a fairer fashion by offering a \$10.00, \$10.00 split still leaves her in a worse position than taking the post-retaliation \$15.00.²⁷⁰

266. See Rabin, *Bargaining Structure*, *supra* note 247, at 4 (arguing that “people’s true preferences include a taste for retaliation against unfair behavior”); see also Jolls et al., *supra* note 70, at 1495 (making the point that spiteful behavior is “principled” in that “[p]eople are willing to pay to punish someone who has been unfair”).

267. See Jolls et al., *supra* note 70, at 1495; see also Joseph P. Daly, *The Effects of Anger on Negotiations over Mergers and Acquisitions*, 7 *NEGOTIATION J.* 31, 31 (1991) (arguing that anger alters the bargaining context, and the overall goals of the parties, by introducing the motive to retaliate against the offending party).

268. See Rabin, *Bargaining Structure*, *supra* note 247, at 5-6.

269. *Id.* at 3 (stating that to the Proposer, the cost of making a fair offer to avoid retaliation is too high).

270. Rabin shows that this result holds even when there are no informational asymmetries or transaction cost issues—i.e., when the parties are playing a game with

Rabin goes on to show how these inefficiencies are much more likely when (1) the Proposer has overwhelming bargaining power, and (2) the Responder "can cheaply impose a moderate amount of harm on the Proposer."²⁷¹ The inefficiencies are more likely when one party has overwhelming bargaining power, since in situations where the Proposer and the Responder have comparable bargaining power, the Proposer realizes that making a fairer offer is a better strategy.

4. CONCLUSION

In this Section, I have argued that an individual's perception of fairness regarding the actions of another can lead him to act kindly or to retaliate. We saw, in Rabin's Sabotage Game, that in situations where one party has superior bargaining power and the other party is able to undertake low-cost retaliations, the end result may be that the party with the superior bargaining power will opt to absorb the costs of these retaliations rather than proposing a fairer allocation of surpluses. As a result, there will be inefficiencies built into the bargaining system in the form of the cost to the retaliator and the costs to the party being retaliated against. The greater the symmetry in bargaining power, the less likely these inefficiencies will occur, given that dividing the pie in a fairer way will be a better strategy than undergoing the retaliation.

V. STRATEGIC SELF-PRESERVING AND RETALIATORY RESPONSES BY ENTREPRENEURS

In Part IV we saw that venture capitalists, by virtue of the control and incentive mechanisms in venture capital contracts, have overwhelming ex post bargaining power, but that the intangible nature of start-up assets provides entrepreneurs with room to bargain ex post. There are two types of actions that I argue an entrepreneur could take once she becomes cognizant of her divergent original expectations. First, the entrepreneur can take self-preserving strategic behavior in order to reduce ex post the contractual risks associated with venture capital contracts. Self-preserving strategic actions are taken with the expectation that the monetary benefits to the entrepreneur will be greater than the monetary costs. This defection from cooperation by the entrepreneur will make it harder to coordinate ongoing venture

complete and perfect information. *Id.* at 3.

271. *Id.* at 1.

cooperation. It may also lead to the venture capitalist defecting, turning the ongoing coordination game into a prisoner's dilemma.

Secondly, the entrepreneur can engage in another type of strategic behavior: retaliation. Unlike self-preserving strategic behavior, retaliation comes at a monetary cost to the entrepreneur that is potentially greater than the monetary benefits. However, under the behavioral assumption of reciprocal fairness discussed above, the entrepreneur would get some utility from retaliating against the perceived unfairness of the venture capitalist. While these are two clear-cut alternatives in theory, in practice it will be difficult for the entrepreneur to know with great certainty whether engaging in self-preserving strategic behavior will produce a net positive monetary return.

However, under the retaliation scenario, the entrepreneur will act strategically even if the expected net monetary returns are negative. When we combine both types of behavior, what we get is a spectrum of possible scenarios where the entrepreneur will act strategically: at one end of the spectrum are strategic actions where the entrepreneur is fairly sure that she will get positive net monetary returns. At the other end of the spectrum are strategic actions where the net monetary returns are negative, but total returns are positive when we incorporate the utility derived from retaliating.

In the middle will be situations where returns are not clear-cut either way. What this means is that entrepreneurs will have an incentive to engage in strategic behavior, whether self-preserving or retaliatory, under a variety of circumstances. Some of this behavior might appear irrational to commentators who assume a rational-actor model—in fact, most venture capital literature would rule it out—but it would make sense under the behavioral assumptions of reciprocal fairness.

In this Part, I re-unite both types of entrepreneurial strategic behavior, self-preserving and retaliatory, and I focus primarily on the divergent original expectations arising out of the founder's disease script, which posits that the venture capitalist will fire the entrepreneur unless the entrepreneur can make the transition from entrepreneur/innovator to a manager who can compete with potential professional managers. Thus, I first set forth what I have called the innovator's dilemma, whereby the quicker the entrepreneur transfers innovation-intensive information to others in the venture, including the venture capitalist, the quicker she will get to the point where she is expendable and can be replaced by a professional manager.

One would expect that the entrepreneur will take self-preserving and retaliatory strategic action (depending on the circumstances) when faced with the innovator's dilemma, as well as some of the other

contractual risks referred to above. Because the entrepreneur gets her bargaining room from the intangible nature of the venture's assets, the three types of strategic behaviors discussed below have their origin in the entrepreneur's control over her human capital.

The three types of strategic behaviors, and their potential repercussions, are the following: (1) the *informational hold-up problem*, in which an entrepreneur holds back information that would be useful to the enterprise, but which, once disseminated, would make her continued employment less valuable; (2) the *dual-task principal-agent problem*, in which an entrepreneur may inefficiently shift her attention away from innovating to focus instead on managing; and (3) a set of related problems that I call the *costs of staged financing*. Finally, this Part discusses some of the potential costs associated with the failure of otherwise viable ventures.

A. *The Innovator's Dilemma*

An entrepreneur begins a venture with a baseline level of human capital in the form of knowledge and information. When a venture capitalist invests in the venture, the entrepreneur will transfer some but not all²⁷² of that information and knowledge. In addition to her human capital, an entrepreneur has other things of value that she will transfer at the beginning of the venture,²⁷³ such as any intellectual property and control over future decisions about exploiting the innovation. After an entrepreneur transfers these ownership rights, the entrepreneur's value

272. 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, see Philippe Aghion & Jean Tirole, *The Management of Innovation*, 109 Q. J. ECON. 1185 (1994).

273. This is achieved through the transfer of existing property rights, such as patents, or of all "future" property rights created over the innovation, as well as through the entrepreneur's agreeing to non-compete and non-disclosure agreements. When one combines these factors with the tendency of entrepreneurs to give venture capitalists a monopoly over future financing, one gets governance structures analogous to those allowed pursuant to U.C.C. § 9-204, where general financiers are allowed to take a security interest in after-acquired collateral and to include future advances clauses in security agreements. See U.C.C. § 9-204. One rationale for such a scheme is that it encourages general financiers to search for potential borrowers, given that once they find them they will get a monopoly over future financings.

to the venture consists primarily in her human capital: her know-how and innovation-specific information. These are the only valuable resources over which she retains control.²⁷⁴

In other words, when a venture capitalist invests in a start-up firm, it invests in two highly intangible and complementary assets: a promising *innovation* and an entrepreneur's *human capital*, which includes an entrepreneur's knowledge and ability required to finish the innovation and transform it into a marketable product. In cases where the innovation-to-product development cycle is sufficiently advanced—that is, where the innovation has enough stand-alone value independent of the entrepreneur's potential future contributions—one would expect the venture capitalist, or, more likely, another investor, to *buy* the innovation, pass on the entrepreneur's services, and instead hire a professional manager to bring the innovation to market.²⁷⁵

There are two reasons, however, 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; that is, the innovation and the entrepreneur's human capital are complementary. Entrepreneurs are valuable in a second way: they are relatively inexpensive, highly-motivated, albeit inexperienced, managers. Finally, the entrepreneur's attachment to her idea, her innovation, may be such that buying the innovation alone would require the venture capitalist to pay an excessive premium to get the entrepreneur to sell it. Instead, the entrepreneur is kept in the firm until she has properly transferred all rights to the innovation to the venture. After that, a venture capitalist can usually fire the entrepreneur with little financial loss.

Once the innovation has been transformed into a marketable product, the entrepreneur and the transformed innovation are no longer complementary. In other words, the value of the new product is independent from the entrepreneur's human capital. As a result, the

274. It will not be complete control, given that provisions in non-competition and non-disclosure agreements make it very costly to leave the firm and sell or deploy that human capital in another venue.

275. 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 16, at 7-8 (discussing how if two firms with independent—i.e., not complementary—assets merge, the merger 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).

required transformation of innovation into marketable product can breed a paradox: an entrepreneur who effectively transforms the innovation into a marketable product and transforms the start-up into a viable company turns herself into a less valuable commodity. I refer to this paradox as the “innovator’s dilemma.”

This is due to the fact that the value of her innovation-related knowledge diminishes, as does the relative-value of her inexpensive managerial labor. As a product gets closer to market and a firm gets closer to an IPO, it becomes easier to attract and compensate (through options) professional managers as an entrepreneur’s replacement. The entrepreneur will become expendable unless she has been able to transform herself into an effective manager who can compete at the managerial level with professional managers, or unless she can show that she has another valuable innovation that requires her knowledge and expertise to bring to market. As John Kenneth Galbraith put it, “[t]he 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.”²⁷⁶ One would expect that as an entrepreneur becomes cognizant of this dilemma, she would find it in her interest to take actions to protect her position in the venture producing deadweight costs.

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. In other words, an entrepreneur will want to maximize both the return to the venture, in which she will share with the venture capitalist, and her private benefits. Many of these private benefits, however, are available to her only if she remains employed with the firm. Such private benefits would include the pecuniary returns usually associated with employment, the non-pecuniary returns well-documented in the agency literature, and the “psychological returns” such as those that come from running the day-to-day activities of the venture and shepherding an innovation all the way from idea to market.

B. 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-related information, thus providing deadweight costs to the

276. Rubenson & Gupta, *supra* note 222, at 167 (quoting J. K. GALBRAITH, *THE NEW INDUSTRIAL STATE* (1971)).

venture. I label this self-preserving/retaliatory non-disclosure or partial disclosure of information the *informational hold-up* problem. Four types of informational hold-up problems by entrepreneurs will be examined. The first type, an attempt at entrenchment, is a reaction to the threat of being fired from the venture—that is, the entrepreneur deals directly with the innovator's dilemma. The second type arises in the monitoring context, where an entrepreneur knows that certain punishing high-powered incentives will be triggered if an event or series of events (as verifiable by the information she holds) comes true. The third type arises from an entrepreneur's attempt to save information for future ventures, in case she is fired. The final type is pure retaliation.

1. ENTREPRENEUR'S INTEREST IN ENTRENCHING HERSELF: PROTECTION AGAINST THE INNOVATOR'S DILEMMA HAZARD

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 possesses certain forms of knowledge that will allow her to best produce and market her innovation. This information may include things such as the range of uses for the new product, technological limitations of the product, potential new innovations to improve or complement the product, and the existence of other potential entrepreneur-competitors. As mentioned above, after an entrepreneur transfers ownership of her innovation to the venture, the entrepreneur's value to the venture consists primarily in her know-how and innovation-specific information. The sooner that this, too, is transferred to the venture, the sooner she becomes expendable. Once she can no longer contribute new information or know-how, it will usually be more efficient for the venture capitalist to hire professional managers than to continue to employ the entrepreneur.

Of course, whether an entrepreneur has "new" information and know-how to contribute will depend on whether the venture capitalist limits the scope of the venture to one innovation or whether it expands its scope so as to encourage and include future innovations. However, the relatively short investment window of venture capitalists means that the primary focus will be on finishing and marketing the original innovation.

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.²⁷⁷ In addition, there is some evidence showing that information-hoarding occurs within information- and knowledge-intensive firms of the type financed by venture capitalists.²⁷⁸ 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:

[The] hoarding of valuable information was common. 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 particularly true during the economically difficult times now facing the company In the information-based

277. See Vincent Alonzo & Daniel McQuillen, *Best Corporate Asset: Brain Power?*, INCENTIVE, Jan. 1996, at 7 (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 over efficiency, or hoarding information as a way to retain power”); Marc Hequet, *Risk*, TRAINING, June 1996, at 84, 91 (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*, BUS. FORUM, Fall 1993, at 5 (an informal empirical study of the effects of downsizing using a class of twenty-seven 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, and finding 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*, INFO. WEEK, 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”).

278. As the chairman of a biotechnology company put it when discussing his company’s lawsuit against another venture the pilfering trade secrets:

We don’t leave papers lying about on desks. People are trained to be careful of what they discuss in public. I wouldn’t use the term cutthroat, but with finite resources of venture risk capital, of talent and technology available to all, the cost of failure to protect what you have is very high: it can be fatal.

Brian James, *Gunfight in Biotech Valley: Night and Day*, MAIL ON SUNDAY (London), Dec. 4, 1994, at 21.

organization, information becomes the primary medium of value and exchange, and who would give it away for free?²⁷⁹

It should be remembered 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.²⁸⁰ This is achieved in part through the adoption of better coordination mechanisms and the use of low-powered incentives. These low-powered incentives help enhance cooperation that in turn fosters informational transfers.²⁸¹

One of the principal reasons for the general belief of venture capitalists that entrepreneurs will not be able to make the transition to management is that entrepreneurs are notorious for refusing to delegate authority to others within the venture.²⁸² Venture capitalists usually

279. Thomas H. Davenport et al., *Information Politics*, SLOAN MGMT. REV., Fall 1992, at 53, 62. There is also some anecdotal evidence of information-hoarding in high-technology firms. For example, in a study of venture capitalist-entrepreneur relationships, one venture capitalist interviewed discussed the holding back of information by the financed entrepreneur:

I had one situation where I had a lack of communication with a guy who was having very serious problems with the business. What he did was to make board meetings a theater where everything was set up to make things look better than they were. There was no honest communication. Things were held back from the directors . . . we were fooled for about six months or so, which really hurt the company badly. The best thing is where the guy kind of just sits down and tells us, "This is what is going on; this is what we're faced with."

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, 314 (1989).

280. See Kenneth J. Arrow, *Vertical Integration and Communication*, 6 BELL J. ECON. 173 (1975).

281. See 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, 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").

282. See Dean & Meyer, *supra* note 222, at 104-05 (empirical study finding that "failure to delegate and listen to others ranked high on the list of reasons" why founders fail); Willard et al., *supra* note 155, at 182 (citing ROBERT B. BUCHELE, BUSINESS POLICY IN GROWING FIRMS (1967)) (stating that a rapidly growing firm will reach a point where it faces a "delegation crisis"—when a founder manager is unable or unwilling to delegate and relinquish control over important decisions). See generally Rubenson & Gupta, *supra* note 222, at 170 (describing literature showing founders' general inability to adapt from a centralized to a decentralized system); Willard et al., *supra* note 155, at 182-83 (summary of literature on founders' reluctance to delegate).

view this as one more example that founders cannot make the transition to managing. 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; the more information they get from her, the more they become a viable alternative.²⁸³

2. ENTREPRENEUR'S INTEREST IN INFLUENCING MONITORING

A second reason why an entrepreneur may engage in informational hold-up is that she knows that the information and innovation-specific know-how in her possession can be used to evaluate the viability of the innovation, as well as her performance.²⁸⁴ The more information and know-how that others within the organization (including the venture capitalist) have regarding the innovation, the better they will be able to evaluate the prospects and limits of the venture, and the more easily they can monitor the entrepreneur and set a baseline with which to measure her performance. The threat of being fired or of venture capitalist opportunism will make the entrepreneur particularly wary of transferring such information. Although an entrepreneur will have to disclose certain information about the innovation in order to convince the venture

283. See Beverly Geber, *The Bugaboo of Team Pay*, TRAINING, Aug. 1995, at 25, 32 (describing incentives of individuals to hoard information or scheme "to undermine rivals for a promotion they want"); Beverly Geber, *Virtual Teams*, TRAINING, Apr. 1995, at 36, 39 ("[O]rganizations in general have created cultures in which information-hoarding is rewarded."); Rebecca Sisco, *Put Your Money Where Your Teams Are; Rewarding Teamwork*, TRAINING, July 1992, at 41 (arguing that organizations create a misincentive when "employees are urged to cooperate but paid to compete" since it at best "leads people to focus solely on their own behavior and not on improving work systems and processes" and "[a]t worst, it encourages them to sabotage one another's performance by hoarding information, ignoring co-workers' requests or even making others look bad"); see also Edward P. Lazear & Sherwin Rosen, *Rank-Order Tournaments as Optimum Labor Contracts*, 89 J. POL. ECON. 841 (1981).

284. 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. For a discussion of influence costs, see Paul R. Milgrom, *Employment Contracts, Influence Activities, and Efficient Organization Design*, 96 J. POL. ECON. 42 (1988). These costs 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 will take actions aimed at signaling competence, irreplaceability, or other important characteristics.

capitalist to fund subsequent stages, a careful (*strategic*) entrepreneur will want to tailor such disclosure to minimize its usefulness in evaluating her overall performance.²⁸⁵

3. ENTREPRENEUR'S INTEREST IN SAVING INFORMATION FOR FUTURE USE

Informational hold-up may also occur because an entrepreneur, anticipating the risk of being fired, will hope to retain exclusive access to innovation-specific know-how and information for use in other, future ventures.²⁸⁶ Of course, there are usually contractual provisions to prevent future competition and to prevent disclosure of trade secrets. Additionally, the corporate opportunity doctrine will provide some constraint on an entrepreneur's future use of innovations developed while with the venture.

However, non-disclosure agreements, trade secret law, and the corporate opportunity doctrine may produce perverse informational effects, since they give an entrepreneur a further incentive to withhold information about *new* innovations that she has developed while

285. As discussed above, venture capitalists are at an informational disadvantage when they first make their investment, since they do not know whether the entrepreneur is going to turn out to be a "lemon." During the venture, the venture capitalist will learn more about the entrepreneur's abilities, work habits, and propensity to self-deal. While a "good" entrepreneur will want to separate herself from "bad" entrepreneurs by signaling, entrepreneurs are, in a sense, innovation-specific, and innovations are very idiosyncratic, making comparison among entrepreneurs difficult. It is only when entrepreneurs move into management that they become more susceptible to comparison, and then, not with other entrepreneurs, but with professional managers who can replace them. Disclosing information about the innovation is, therefore, not likely to help a good entrepreneur separate herself from a "bad" entrepreneur and it may very well lead to the venture capitalist deciding to dissolve the whole venture.

286. See, e.g., James J. Anton & Dennis A. Yao, *Start-ups, Spin-offs, and Internal Projects*, 11 J.L. ECON. & ORG. 362, 362 (1995). The authors examine "the incentive problem confronting a firm and employee when the 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)." *Id.*; see also Sudipto Bhattacharya et al., *Licensing and the Sharing of Knowledge in Research Joint Ventures*, 56 J. ECON. THEORY 43, 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); Ariél Pakes & Shmuel Nitzan, *Optimum Contracts for Research Personnel, Research Employment, and the Establishment of "Rival" Enterprises*, 1 J. LAB. ECON. 345, 345 (1983) (examining the problem of hiring research scientists when one takes into account the possibility that they can use the information they acquire while employed in a rival venture).

employed by the venture. While venture capitalists usually expect that the venture will be restricted to the one original innovation, the corporate opportunity, non-disclosure, non-compete, and trade secret constraints increase the probability that a second innovation will be deemed the property of the venture. This informational problem is exacerbated by the general difficulty of establishing clear-cut property rights over the information.²⁸⁷

4. ENTREPRENEUR'S INTEREST IN PURE RETALIATION

While the first three informational hold-up scenarios would support an interpretation that the entrepreneur is engaging in either type of strategic behavior, we can also assume that she can use her control and deployment of information for purely retaliatory purposes. An entrepreneur may retaliate not only when she continues to be a part of the venture, but also when she is facing a short time-horizon (such as imminent dismissal or dissolution of the firm). In such a case the entrepreneur may very well want to punish the venture capitalist by not disclosing relevant information, even if such information is of no continuing value to her.

C. To Innovate or to Manage: The Dual-Task Agency Problem

As a venture progresses, an entrepreneur must decide how much additional 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 once the entrepreneur is no longer with the firm.²⁸⁸ An entrepreneur cannot easily diversify her human capital because she cannot usually work in more than one place at a time. Thus, when deciding how much general and how much firm-specific human capital she will acquire, an entrepreneur will have to balance the probability of being fired (in which case her firm-specific human capital will lose its value) against the importance for the

287. 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 609 (1962); see also James J. Anton & Dennis A. Yao, *Expropriation and Inventions: Appropriable Rents in the Absence of Property Rights*, 84 AM. 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, such as customers and competitors, can appropriate all or part of the economic rents from innovation).

288. See generally GARY S. BECKER, HUMAN CAPITAL 33-51 (3d ed. 1993).

venture's success of the entrepreneur acquiring firm- or innovation-specific human capital.

1. THE DUAL TASK PROBLEM

As Holmstrom and Milgrom have observed, incentive schemes serve not only to determine the agent's level of effort in general, but also the choice of tasks to which she decides to allocate her time and effort.²⁸⁹ A well-tailored incentive scheme should strive, therefore, to ensure not only that the agent's overall level of effort is high, but also that she directs her attention toward the tasks that will maximize the returns to the firm. Milgrom and Roberts offer the example of an incentive scheme that rewards teachers based upon the scores received by their students on standardized tests. Such an incentive scheme can have the unintended effect of motivating instructors to spend more time teaching material that will be tested, while spending less time teaching creative, mind-enriching subjects that, while not tested, may prove more beneficial in the long run.²⁹⁰

For the sake of simplicity, we will focus on two types of tasks available to entrepreneurs: innovating and managing. Of course, there are myriad other activities that one may expect an entrepreneur 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.²⁹¹

289. See generally Bengt Holmstrom & Paul Milgrom, *Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design*, 7 J.L. ECON. & ORG. 24, 24-25 (1991) [hereinafter Holstrom & Milgrom, *Multitask Principal-Agent*]. The discussion in this Section is based on the dual-task principal agent model developed by Holmstrom and Milgrom in a series of articles. See also Bengt Holmstrom & Paul Milgrom, *Aggregation and Linearity in the Provision of Intertemporal Incentives*, 55 ECONOMETRICA 303 (1987).

290. Holmstrom & Milgrom, *Multitask Principal-Agent*, *supra* note 289, at 25. One can think of other examples. A rule requiring athletes at a college to have certain minimum grade point averages in order to compete may lead that college to hire a tutor to help its students. High-powered incentives from coaches of various teams can lead that tutor to write term papers herself, a task that was not intended. The result of doing so will be more observable—an otherwise failing student passing a class—than merely helping that student and hoping that he performs well in class.

291. 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 activities aimed at creating a new product or making it better, and “managing” to refer to activities aimed at running the general affairs of the company, and with producing and marketing the product.

One can assume that during the early part of the venture, an entrepreneur will principally focus on the innovation process, aiming to improve and finish the innovation. Towards the middle and latter parts of the venture capitalist's investment window, an entrepreneur will need to turn her attention more fully to the tasks of managing and marketing. Her ability to quickly mature into an effective manager will be critical for the venture's success (unless she is replaced by a professional manager). Of course, an entrepreneur will have to manage during the first part of the venture and will usually continue the innovating process later on.

The potential mischanneling of an entrepreneur's effort is of prime importance to a venture capitalist who wants an entrepreneur to focus on innovating until the venture reaches the manufacturing and marketing phases.²⁹² One reason that such mis-channeling may occur is that the act of innovating (or working towards bettering an existing innovation) is generally harder to observe and measure than the act of managing. Ideas and innovations germinate in the mind of the entrepreneur over a period of time, which can include years. Some thoughts and sketches may see the light of day, but it is difficult from looking at them to determine just how hard the entrepreneur has been innovating. In short, innovation is a hidden (largely mysterious) exercise that 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-term 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.

On the other hand, the act of managing is a far more open activity where decisions are made and actions taken in public, at least in view of those within the venture. Management decisions will be memorialized

292. 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). 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, [and] 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.

Id.

in corporate minutes, in notes from informal meetings, and in many other ways. 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 in the short run.²⁹³

2. CONSEQUENCES OF THE DUAL TASK PROBLEM

This combination of observability and time horizons in venture capital transactions, when combined with the innovator's dilemma, will cause entrepreneurs to focus their attention on managing. In particular, entrepreneurs in this situation will focus on acquiring the human capital to be a good manager, rather than on improving a current innovation. Thus, the incentive mechanisms in venture capital contracts may, in some instances, have the effect of channeling entrepreneur attention away from those activities for which she has a comparative advantage (and which are best for the venture) to managing activities that are usually best performed by professional managers. It is because of this type of distortion that commentators usually argue that within firms, low-powered incentives are better than high-powered ones.²⁹⁴

293. It should be noted that for purposes of the dual task model, it does not matter if the reverse were 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. While it seems quite plausible that innovating is less observable than managing, the main point being made here is that by not paying closer attention to clearly delineating the tasks expected of the entrepreneur *ex ante*, the entrepreneur may be given the wrong incentive regarding which task to perform at each phase of the venture.

294. See WILLIAMSON, *ECONOMIC INSTITUTIONS*, *supra* note 32; see also Pien Wang & Peng S. Chan, *Top Management Perception of Strategic Information Processing in a Turbulent Environment*, *LEADERSHIP & ORG. DEV. J.*, 1995, at 33, 39.

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.

The nature of the innovation process exacerbates the dual task problem by making it difficult to ascertain when an entrepreneur should shift to spending more time managing than innovating. As mentioned above, the innovation process is not a straight line progression from design to development to production to marketing, but it is both serial and cyclical, involving "rapid feedback, mid-course corrections to designs, and redesign."²⁹⁵ An entrepreneur must focus on innovating activities (particularly improvement of the innovation) during all stages of the venture, even though as the venture gets closer to the marketing stage, she will also have to pay heed to marketing issues.

Moreover, given the fast-paced nature of the expected transformations of venture capital-financed ventures described above, the entrepreneur must be able to quickly transform herself into a "good" manager or face the prospect of being demoted or fired. Thus, from the earliest phases of the venture, an entrepreneur must signal to the venture capitalist that she is involved in active, productive managing. However, since an entrepreneur is required to perform both tasks (the innovation must also be finished and brought to market), she may have an incentive to slow down the innovation phase in order to have additional time to acquire managerial skills.²⁹⁶

D. The Costs of Staged Financing

Staged financing can produce two types of entrepreneurial strategic behavior. First, staged financing can lead to a ratcheting effect that works as follows. A venture capitalist will provide an entrepreneur with a performance milestone that she must meet before the venture capitalist agrees to fund an additional stage. The milestone will represent the venture capitalist's judgment of how much an entrepreneur can achieve in a stage. Therefore, if an entrepreneur, upon exerting a greater amount of effort, exceeds the milestone in a stage, a venture capitalist may revise its belief regarding how much can be achieved in a given stage. To avoid this ratcheting effect, an entrepreneur will, at each stage, provide just enough effort to meet the required milestones, but not exceed them.

Secondly, staged financing can lead to myopic behavior of entrepreneurs—a focus on meeting short-term needs as opposed to

295. Jorde & Teece, *supra* note 101, at 14-15.

296. See Dean & Meyer, *supra* note 222, at 101-02 (empirical study showing that survival rates increase when firms grow slower); Rubenson & Gupta, *supra* note 222, at 177-78.

keeping a view of the overall, long-term picture.²⁹⁷ This is no different from the behavior exhibited by managers of public corporations who, in the throes of capital market pressures, may focus on projects that will bring a positive return in the short run rather than the long run. High-powered incentives in venture capital contracts, in particular, the use of staged financing, are meant to replicate (as much as possible) such market pressures.²⁹⁸ One can contrast this to Holmstrom's argument that one reason that a disproportionate amount of innovation occurs in small firms is that they are not subject to the distorting, myopia-inducing effects of the high-powered incentives of capital market discipline.²⁹⁹

E. 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 new products that are technology-intensive. As we saw above, governance structures based on physical, as opposed to intangible, assets allow the owner of those assets to specify, after the fact, how those assets are to be used, thereby reducing ex post haggling upon the occurrence of unforeseen contingencies.³⁰⁰ Firms comprised of mostly intangible assets tend to be harder to govern and keep together, since disagreement among firm members can lead to the exit of one or more of them, and ultimately the firm's dissolution.³⁰¹ Both venture capitalists and entrepreneurs have some interest in showing commitment to the venture. If each party believes that the other is about to leave the venture, neither will have an

297. One sees the same perverse effect produced in the awarding of scientific grants. There is a tendency to choose projects that will bear results sooner rather than later, in order to increase the probability of receiving future grants. These grants will be forthcoming either because one can show that one has made sufficient progress, or because one has finished a project and has something to show for it.

298. High-powered incentives increase the environmental hostility in which entrepreneurs operate. This in turn has the effect of leading entrepreneurs to focus on solving short-term problems rather than on long-term strategy and issues. However, a number of empirical studies have found that, in hostile environments, firm performance is positively correlated with an emphasis on long-term profitability and capital investments. See Jeffrey G. Covin & Dennis P. Slevin, *Strategic Management of Small Firms in Hostile and Benign Environments*, 10 STRATEGIC MGMT. J. 75 (1989) (study of 161 small manufacturing firms); Slevin et al., *supra* note 112, at 184 (study of 364 advanced technology manufacturing firms).

299. See Holmstrom, *supra* note 27.

300. See HART, *supra* note 16, at 3-4.

301. For a discussion of the "flimsiness" of firms caused by the lack of hard assets, see *id.* at 58-59.

incentive to invest in relation-specific assets. One way of showing this commitment is by making relationship-specific investments,³⁰² but as the prospects for a venture decrease, the parties will be less likely to have an incentive to continue to make relationship-specific investments.³⁰³

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.³⁰⁴ For example, Gorman and Sahlman have argued that in some cases "the [venture capital] process itself may even promote failure."³⁰⁵ 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 (sometimes the "major cause") of their firm's failure.³⁰⁶ In

302. See David Roth, *A Theory of Partnership Dynamics*, 12 GAMES & ECON. BEHAV. 95, 107 (1996).

303. *Id.* at 108.

304. Generally, a "firm" can be viewed as a cooperative venture where the parties have common goals, such as maximizing the value of the firm, and potentially conflicting ones, such as maximizing their individual returns, even if at the expense of other parties. Where conflicting goals become paramount, as when a firm approaches bankruptcy, the firm's viability can quickly deteriorate. See THOMAS H. JACKSON, *THE LOGIC AND LIMITS OF BANKRUPTCY LAW* (1986). As we will see below, in the venture capital area, conflicting goals play a major role, even from a venture's beginnings.

However, the exact relationship between firm failure and the types of venture capital contracts usually adopted is still an empirical question that needs to be studied more precisely. One purpose of this Article is to begin to provide a theoretical framework to help distinguish between failures caused by the organizational structures adopted and those caused by random shocks.

Generally, it is hard to judge what "high level of failure" entails, given that the baseline for comparison is hard to pin down. However, empirical evidence tends to show that venture capital-entrepreneur relations play an important role in firm survival. See *infra* note 306.

305. See Gorman & Sahlman, *supra* note 160, at 238 (arguing that "'failure' is at the very least endemic to the venture capital process, an expected, commonplace event; in some cases, the process itself may even promote failure").

306. The empirical study has been tracking 250 Silicon Valley firms since 1960. See Albert V. Bruno & Joel K. Leidecker, *A Comparative Study of New Venture Failure: 1960 v. 1980*, in *FRONTIERS OF ENTREPRENEURSHIP RESEARCH* 375 (1987). The authors found that as of 1984, ninety-six firms had failed. *Id.* Of those firms, the authors successfully used a sample ten firms that failed in the 1960s and twelve firms that failed in the 1980s. *Id.* Four of the ten founders of the 1960 firms identified the category "Problems With The Venture Capital Relationship" as "a major cause of failure." *Id.* at 382. 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. *Id.* at 382; see also Bruno et al., *supra* note 56, at 677, 689 (arguing generally that "problems with the venture capitalist relationship" was an important factor in the failure of the firms that they

particular, venture capitalists' propensity for firing entrepreneur-CEOs can help foster the venture's failure.³⁰⁷ The use of high-powered incentives in firms can undermine trust and cooperation,³⁰⁸ or lead to costly distortions. 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 results."³⁰⁹ Additionally, the turn towards strategic behavior increases when the venture is facing difficulty;³¹⁰ that is, when the entrepreneur and venture capitalist view themselves as being involved in a game with a shortening horizon and when reputational constraints become less binding. Thus, as a venture's prospects worsen, the parties' reactions can, if unchecked, lead to the venture quickly coming apart.³¹¹

Samson and Gurdon undertook a survey study of twenty-two scientists and twenty venture partners in order to discern the principal differences in venture approaches between the two groups.³¹² The

sampled).

307. See KUNZE, *supra* note 292, at 213-24.

308. On the role of high-powered incentives in undermining cooperation and unity within a group, see WILLIAMSON, *ECONOMIC INSTITUTIONS*, *supra* note 32, at ch. 6; Itoh, *supra* note 281; Lazear, *supra* note 281.

309. Alex Barnum, *High-Profile Flops Hit Biotech, Promising Drugs Often Founder in Human Trials*, SAN FRANCISCO 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*, HARV. BUS. REV., Nov.-Dec. 1992, at 109, 112-13. Bhidé argues that "[c]onflicts between investors in a business and its day-to-day managers are a fact of life" and that outside investors, such as venture capitalists, can diminish the flexibility of entrepreneurs to engage in "the try-it, fix-it approach required in the uncertain environments in which start-ups flourish." *Id.* Bhidé also reports 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." *Id.*

310. See Guth et al., *supra* note 209 (noting entrepreneur's increased focus on external risk factors as the venture experienced severe setbacks).

311. For an example of 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). This spiraling effect makes it much more difficult for participants and commentators to step back and analyze the extent to which the venture's difficulties are a function of an increase in strategic behavior as opposed to other factors.

312. Karel J. Samsom & Michael A. Gurdon, *Entrepreneurial Scientists: Organizational Performance in Scientist-Started High Technology Firms*, in *FRONTIERS*

authors found that half of the ventures studied had experienced “serious venture team related upheavals since [the] inception” of the venture.³¹³ 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 capitalists were more concerned with getting the product to market as quickly as possible.³¹⁴

VI. NORMATIVE AND DOCTRINAL IMPLICATIONS

This Article has argued that the following three factors generally apply when entrepreneurs transact with venture capitalists: (1) entrepreneurs have substantial *divergent original expectations*—i.e., at the time of contracting, entrepreneurs will tend to have mistaken beliefs about the nature of the transactional context—a fact that entrepreneurs will learn about as they interact with venture capitalists and as onerous provisions in venture capital contracts are triggered; (2) entrepreneurs have sufficient ability to *freely maneuver* during the venture to engage in the two types of strategic behavior described above—i.e., entrepreneurs have enough ex post bargaining power to take actions that can hurt venture capitalists; and (3) entrepreneurs who choose to exit the venture or are fired by venture capitalists are *heavily penalized*.

Further, this Article has argued that when these three factors are present, entrepreneurs will have an incentive to engage in self-preserving strategic behavior and “retaliation.” In other words, as an entrepreneur learns about her divergent original expectations and the attendant unforeseen contractual risks, she will have to decide whether to stay in the venture or exit. Given the high exit penalty, an entrepreneur will generally opt to stay in the venture. However, she will have an incentive to use her ability to maneuver to engage in two types of strategic behavior. As was discussed above, the deadweight costs associated with entrepreneurial strategic behavior will impose an organizational burden on already fragile high tech start-ups. Reducing divergent expectations should not only help to reduce these deadweight costs, but will also produce other beneficial side effects discussed

OF ENTREPRENEURSHIP RESEARCH 437, 443 (1990) (discussing findings from forty-two interviews, with twenty-two scientists and twenty venture partners, mostly in New England, Quebec, and Ontario).

313. *Id.* at 448.

314. *See id.*

below.

It is important to clearly delineate between the problem of divergent expectations and potential solutions. It is quite possible to disagree with the potential solution discussed below—creation of a disclosure requirement—without rejecting the premise that a problem exists that should be solved. The problems explored in this Article have not been previously identified in the literature because the types of questions required to identify the problems do not easily come to mind under the typical venture capitalist-centric approach used in the prior literature. That approach focuses on identifying the contractual hazards faced by venture capitalists and studying the contractual solutions adopted to reduce these hazards. The venture capitalist-centric approach has produced important insights necessary for truly understanding these transactions. The entrepreneur-centric approach adopted in this Article is meant to complement the venture capitalist approach and not to refute it.

To reduce entrepreneurial strategic behavior, it is necessary to address one or more of the three motivating factors mentioned above. As discussed in Part I, the high penalty for entrepreneurial exit is due to legitimate venture capitalist concerns.³¹⁵ Moreover, given the nature of the assets in high tech start-ups and the importance of the entrepreneurs' human capital to the success of these ventures, it is hard to completely curb entrepreneurial maneuverability.³¹⁶ This leaves an entrepreneur's divergent original expectations—her mistaken beliefs—as the only factor that can be effectively manipulated.

Venture capitalists, as repeat players, possess important facts about the contractual context and about the how they expect to behave during the venture—information that can be used to reduce an entrepreneur's divergent original expectations. This Article argues that a venture capitalist should be provided with a clear legal incentive to disclose certain types of information in order to help reduce an entrepreneur's divergent original expectations. As we will see, mere disclosure is not enough; it has to be a disclosure aimed, in part, at addressing the over-

315. For example, entrepreneurs who can credibly threaten to exit the venture can create a hold-up problem for venture capitalists. Moreover, a venture capitalist has a legitimate interest in preventing an entrepreneur who exits the venture from disclosing trade secrets or competing directly with the venture. This does not mean that it is not possible to reduce the exit penalty, although this Article does not address this issue directly.

316. This is the case, at least until the value of an entrepreneur's human capital has lost all or most of its value to the venture, making the entrepreneur expendable.

optimism of entrepreneurs.³¹⁷

A. The Potential Benefits of Reducing Divergent Original Expectations of Entrepreneurs

1. CENTRIFUGAL AND CENTRIPETAL ORGANIZATIONAL FORCES
AFFECTED BY DIVERGENT ORIGINAL EXPECTATIONS

Reducing divergent original expectations of entrepreneurs should help reduce entrepreneurial strategic behavior, which are socially wasteful actions aimed at redistribution and retaliation and are not aimed at producing wealth. However, given the organizational fragility of high tech start-ups, reducing strategic behavior and their attendant deadweight costs should provide an additional social benefit: reducing the risk of failure of otherwise viable start-ups with socially useful innovations.

While a venture capitalist's disclosure should reduce the probability that an entrepreneur would characterize the venture capitalist's actions at the time of contracting as "unfair" and retaliate, it can also lead an entrepreneur to characterize the venture capitalist's disclosure as an act of "fairness." According to the reciprocal fairness literature, this can lead an entrepreneur to reciprocate by acting fairly herself. For example, she may reduce her overall self-serving or strategic behavior. This reciprocating of fairness for fairness can increase cooperative behavior within ventures, acting as a sort of organizational "glue" to keep otherwise viable ventures together.³¹⁸

It is well accepted among venture capitalists that a high percentage of the ventures that they finance will fail. The venture capital literature generally takes this high failure rate as a given. It is important, however, to look at the issue of venture survival not only from the

317. As Wittgenstein wrote upon reading Frazer's *Golden Bough*:

We must begin with the mistake and transform it into what is true.

That is, we must uncover the sources of error; otherwise hearing what is true won't help us. It cannot penetrate when something is taking its place.

To convince someone of what is true, it is not enough to state it; we must find the *road* from error to truth.

LUDWIG WITTGENSTEIN, REMARKS ON FRAZER'S *GOLDEN BOUGH* 1e (Rush Rhees ed., A.C. Miles, trans., 1979).

318. See Nelson, *supra* note 253, at 1-4 (reporting results of behavioral experiment finding support for the reciprocal fairness prediction that "people behave fairly because they expect others to treat them fairly" and arguing that cooperation by an individual in an organization will depend on how much she expects others to cooperate).

perspective of venture capitalists and entrepreneurs, but also from that of society,³¹⁹ particularly given the social and economic importance of innovations.³²⁰

2. BETTER ALLOCATION OF RESOURCES ASSOCIATED WITH FINANCING INNOVATION PROJECTS

Reducing divergent expectations should allow entrepreneurs to better value transactions with venture capitalists. This is important because the funds available to venture capitalists to invest in portfolio companies are limited. One would presumably want to allocate these limited resources to entrepreneurs who value transactions with a venture capitalist the most.

An entrepreneur will generally take a number of factors into account when valuing a venture capital transaction, including (1) job security; (2) potential for completing the innovation; (3) ability to regain control over the innovation if the venture capitalist decides not to continue to fund the venture; (4) expected monetary returns; and (5) the variance associated with these expected returns. The last factor is very important. Venture capital transactions exhibit high variance regarding monetary returns. In essence, a venture capitalist offers an entrepreneur the potential to receive very high monetary returns, but with a catch—the possibility that the entrepreneur will lose everything that she invested into the venture, such as her savings, her innovation, her time, and her effort.

As a result, an entrepreneur who prefers a chance to receive very high monetary returns, notwithstanding the attendant risks, would more highly value a venture capital transaction than an entrepreneur who prefers job security, completing her innovation, and preserving her equity. However, if entrepreneurs do not have sufficient information regarding the valuation factors set forth above, they will not be able to properly value a transaction with a venture capitalist. This can lead to an entrepreneur who values job security, completing the innovation, and low risk returns entering into a venture capital transaction at the expense

319. In other words, we should account for potential negative externalities that can negatively affect third parties. See, e.g., MILGROM & ROBERTS, *supra* note 18, at 75.

320. See, e.g., Talley, *supra* note 224, at 1956 (arguing that the distortions produced by the strategic behavior of a party with superior information may lead not only to certain beneficial bargains not being reached, but may also lead to value-destroying agreements).

of other entrepreneurs who prefer high monetary return, regardless of the variance, and who would therefore more highly value the transaction.³²¹

3. OTHER COSTS ASSOCIATED WITH THE ALLOCATION OF ENTREPRENEURIAL HUMAN CAPITAL

There are other costs associated with uninformed allocations of entrepreneurial human capital. In deciding whether to transact with a venture capitalist, an entrepreneur is making a decision of how to allocate her human capital. An entrepreneur may have other alternative uses of her human capital, such as (1) staying with her current employer, (2) staying in school, or (3) continuing with her start-up, but financing it without venture capital funds. The decision whether to allocate her human capital to a venture capital transaction or to allocate it in an alternative fashion will be affected by the relative value that she assigns to each of the alternatives. If, due to mistaken beliefs regarding venture capital transactions, entrepreneurs systematically assign higher valuations to venture capital transactions than they do to alternative uses of their human capital, society may end up with an excessive number of entrepreneurs seeking to form start-ups with venture capital funding. This potential over-entry into the start-up market has a number of repercussions.³²²

321. This allocational efficiency problem is analogous to that encountered in the sale of a home by an owner who knows that the house is full of lead paint. A family with children would value such a house less than would a childless couple. However, if the information regarding the lead paint is not known to either family, the family with children may end up buying the house, even though the other family values it more. Therefore, it would make sense to require the owner to disclose to potential buyers the existence of lead paint, so that the house is purchased by the family that values it the most. See Robert H. Gertner, *Disclosure and Unravelling*, in 1 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW, *supra* note 229, at 605, 606-07 (discussing the efficiency reasons behind disclosure in this latent defect example). Under most jurisdictions, a seller of non-commercial real estate with superior knowledge of a material latent defect has a duty to disclose that information to the buyer. See, e.g., *Hill v. Jones*, 725 P.2d 1115, 1118 (Ariz. Ct. App. 1986) (citing RESTATEMENT (SECOND) OF CONTRACTS § 161 (1981)).

322. The recent overly enthusiastic entry by entrepreneurs into the start-up market followed by the quick, severe, and quite public retrenchment may also have the undesired effect that in the future, entrepreneurs with viable innovations may be more hesitant to leave their established jobs to form a start-up, even though their current firm may not be interested in developing their innovations. Part of the reason that potential entrepreneurs may feel that way is due to the availability bias, since the stories of the "dot.com bomb," the "market bubble," and worthless options will be quite salient and

For example, when an experienced worker leaves an established firm and forms a start-up, the R&D efforts of her former employer may suffer due to disruptions in innovation teams and the loss of the entrepreneur's firm-specific human capital. Of course, some of the innovations from these start-ups will find themselves back in the hands of these established firms. However, even if an entrepreneur eventually returns to her former employer, she may be unable to share some of her human capital due to non-compete and non-disclosure agreements.³²³

Similar arguments can be made regarding a potential entrepreneur's choice between continuing her education or leaving school and forming a start-up. For example, at the height of the recent high tech bubble, there was great concern in computer science departments regarding the decrease in PhD candidates choosing to stay in academia, and the decrease in PhD applicants, as students went straight from college or a master's program into industry.³²⁴

B. Disclosure Requirement as a Means for Reducing Divergent Original Expectations

In this Section, I argue that the most direct way to reduce entrepreneurial divergent expectations is by reducing the number of mistaken beliefs held by entrepreneurs at the time of transacting. Complexity, over-optimism, and venture capitalist actions, representations, and omissions are three principal sources of divergent expectations. Therefore, any attempt to reduce these divergent expectations should be carefully tailored to address these three causes.

may lead them to perceive the risk of leaving an established firm to form a start-up as greater than it may really be. On the availability bias, see Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, *supra* note 68, at 163.

323. Non-compete and non-disclosure agreements will, at the very least, slow down the process of diffusion of entrepreneurial human capital to established companies. This is particularly true of start-ups in bankruptcy facing creditors who are trying to make sure any intangible assets are effectively "propertized" so that they can dispose of them for cash. Creditors, moreover, may not want to establish a reputation for waiving non-compete and non-disclosure agreements since a rational established firm would refuse to buy the assets and rely on the creditors waiving the agreements.

324. See, e.g., Scott Carlson, *Computing Group Says Colleges Face a Shortage of Faculty Members in Computer Science*, CHRON. OF HIGHER EDUC. (Mar. 27, 2001), <http://chronicle.com/free/2001/03/2001032701t.htm> (stating that there has been a decrease in PhD students as more students opt for a master's degree and that "computer science students will continue to look for careers in industry rather than academe").

1. REDUCING DIVERGENT EXPECTATIONS BY “DECOMPOSING” COMPLEXITY

The high complexity of venture capital transactions, combined with the general inexperience of entrepreneurs with venture capital financing, is one cause of entrepreneurial divergent expectations. An entrepreneur constructing her original expectations at the time of contracting will need to understand how the provisions in venture capital contracts work.³²⁵ She will also need to know how the contractual environment can impinge on the workings of highly incomplete contracts,³²⁶ and understand the interrelationship among different contractual provisions across the collection of venture capital contracts.³²⁷

a. Cognitive Load and “Coupling”

We can generally assume that the level of complexity of a system and the *cognitive load* required to understand such a system increases with the number of sub-parts of the system in question³²⁸ and with the level of “coupling,”³²⁹ or interdependence between these different sub-parts.³³⁰ Venture capital transactions, under this view, are highly complex, given the large number of contractual provisions across the myriad venture capital contracts, as well as the existence of other non-

325. Really what is required is an understanding of each *material* provision—i.e., those provisions that can have a significant effect on a party if triggered.

326. Understanding a contract requires some knowledge of the environment in which the contract operates and the interrelationship between that environment and the various contractual provisions—i.e., when different occurrences in that environment will trigger operation of the contract.

327. Understanding such a collection of contracts will be affected by the level of “coupling” among provisions within and across those contracts.

328. See generally SIMON, *supra* note 69, at 195 (defining a complex system as “one made up of a large number of parts that interact in a nonsimple way” and where “given the properties of the parts and the laws of their interaction, it is not a trivial matter to infer the properties of the whole”).

329. See CALEB DRAKE, OBJECT ORIENTED PROGRAMMING WITH C++ AND SMALLTALK 108 (1998) (describing the notion of coupling as used in object oriented programming as “the degree of interdependence between the modules in a system” and stating that software engineers try to minimize the level of coupling among different modules by clearly delineating the interface through which each module interacts and minimizing the amount of interaction among modules).

330. See generally SIMON, *supra* note 69, at 218-219 (stating that the fact that many complex systems have a nearly decomposable, hierarchic structure is a major “facilitating factor enabling us to understand, describe, and even ‘see’ such systems and their parts”).

memorialized sub-parts, such as staged financing. Additionally, as we will see below, these subparts are highly “coupled” or interdependent, adding to the overall complexity. Among other things, one would expect that the more incomplete a contract, the greater will be the “coupling” between the contractual environment and the contractual provisions.³³¹

Therefore, one approach for reducing the divergent expectations of an entrepreneur is to reduce the cognitive load that she faces. Reducing the number of contractual provisions (and other sub-parts of the overall contractual context), would, of course, help. However, it would be difficult to significantly reduce the number of such provisions while still addressing the legitimate concerns of venture capitalists set forth in Part I.

A better approach would be to require disclosure of the different contractual sub-parts in a manner that would bring to the foreground any interdependence among them. The goal would be to try to de-couple the various transactional sub-parts, so as to make each sub-part more transparent. This should allow an entrepreneur to value each sub-part independently, thereby becoming more cognizant of overall transactional risks.

b. Examples of Highly Interdependent Contractual Provisions

The following provides examples of four areas in venture capital financing where contractual provisions are highly coupled. First, venture capitalist control over the board is closely coupled with other contractual provisions. In order for an entrepreneur to fully understand the effects of handing over control of the board, it is necessary to bring to the foreground these various couplings. For example, control of the board allows a venture capitalist to fire the entrepreneur and to set the managerial agenda, including the pace of the venture’s development, the hiring of the team that will work alongside the entrepreneur, and budgeting and other financial decisions.³³²

331. This is because the operation and interpretation of under-specified contract provisions will depend more heavily on how the contractual environment operates and evolves.

332. While the outcomes of the venture will be used to judge an entrepreneur’s managerial abilities, these outcomes will, in part, be a result of the venture capitalist’s actions through its control of the board, as well as the actions of team members chosen by the venture capitalist.

Secondly, incentive compensation schemes used by venture capitalists are closely "coupled" with other provisions. For example, an entrepreneur has no right to stock allocated to her through options until the stock vests, which means that if a venture capitalist uses her control of the board to fire the entrepreneur the following can occur: any stock that has not vested reverts to the venture, and the entrepreneur may be forced to sell back to the venture all or part of her stock holdings. Additionally, even after an entrepreneur's stock has vested, anti-dilution provisions can effectively dilute all or part of her equity. Finally, before the venture goes public, an entrepreneur will be unable to diversify her risks by selling some of her equity.

Third, when discussing the staged financing mechanism, venture capitalists must make the following coupling factors very clear: (1) the venture capitalist is not making any commitment to finance future stages; (2) the venture capitalist can wait until close to the "burn date" before agreeing to finance a new stage; (3) the entrepreneur's equity may be diluted whenever events that trigger the anti-dilution provisions occur; (4) the venture capitalist will have a monopoly over future financings; and (5) the venture capitalist can cause the liquidation of the venture.

Fourth, disclosure would need to clearly specify the interdependence between various contractual provisions that, as a whole, make voluntary or involuntary entrepreneurial exits very costly: (1) vesting schedules for stock awards, (2) requirements to sell back stock at book value, (3) non-compete agreements, (4) non-disclosure agreements, and (5) the corporate opportunity doctrine.

2. REDUCING DIVERGENT EXPECTATIONS THROUGH THE PROACTIVE ACTIONS OF VENTURE CAPITALISTS

Over-optimism is another source of entrepreneurial divergent expectations. As was shown above, numerous studies have shown that entrepreneurs are exceedingly overoptimistic. Studies showing that entrepreneurs believe that their venture has a higher chance of success than a venture with the same characteristics, betray over-optimistic beliefs by entrepreneurs about their general managerial skills.³³³ Overly-optimism studies finding that entrepreneurs interpret transactional facts in a manner that de-emphasizes attendant risks, that

333. Over-optimism about managerial skills poses a potential hazard to entrepreneurs, who may over-estimate their ability to make the transition to an effective manager—i.e., a belief that the "founder's disease" will not apply to them.

they under-invest in acquiring transactional-specific information, and tend to enter transactions without consulting outside experts, all show increased divergent expectations.

Venture capitalist actions, representations, and omissions are another principal source of entrepreneurial divergent expectations. Venture capitalists, as repeat players, have a repository of knowledge that they can use to help frame and construct an entrepreneur's beliefs in a self-serving manner. The information provided or omitted by a venture capitalist during negotiations will affect the entrepreneur's expectations. This problem is exacerbated by the fact that over-optimism can lead entrepreneurs to trust information proffered by venture capitalists and not to verify it independently. For example, as we saw above, a major source of entrepreneurial divergent expectations is the information provided in the venture capitalists' promotional literature. I argue that reducing divergent expectations caused by over-optimism and venture capitalist representations and omissions is best accomplished through well-crafted venture capitalist disclosure. The goal will be to identify and revise entrepreneurial false beliefs at the time of contracting

a. Identifying and Revising Mistaken Beliefs

Mistaken beliefs are best attacked with evidence aimed at revising those beliefs. The goal is to bring those beliefs closer to the true facts about the transactional context. In order to accomplish this, an individual can adopt the following procedure: (1) identify the existence of a mistaken belief; (2) identify the mistaken "facts" used to construct that belief; (3) determine what type of evidence or information can be used to rebut these mistaken facts; (4) determine whether one will need to acquire or produce information; (5) use that information as evidence to revise the prior belief.

The most useful information for combating entrepreneurial divergent expectations is the type of information that venture capitalists, as repeat players, acquire as a "by-product" of financing entrepreneurs generally,³³⁴ making venture capitalists the lowest cost producer of that

334. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 110 (4th ed. 1992) (arguing that a homeowner's information about a termite infestation in her home is the type of information that is most likely acquired as a "by-product" of living in the home); see also KIM LANE SCHEPPELE, *LEGAL SECRETS: EQUALITY AND EFFICIENCY IN THE COMMON LAW* 32-36 (1988); Anthony T. Kronman, *Mistake, Disclosure, Information, and the Law of Contracts*, 7 *J. LEGAL STUD.* 1 (1978).

information.³³⁵ For example, venture capitalists know that entrepreneurs tend to be overoptimistic and inexperienced in dealing with the complexity inherent in venture capital transactions. As a result, a venture capitalist is in the best position to identify entrepreneurs' mistaken beliefs and the mistaken facts underwriting those beliefs, to determine what information can be used to help revise those beliefs, and to make that "by-product" information available to entrepreneurs.

The first four parts of an entrepreneur's belief revision procedure described above can thus be best accomplished by adopting a well-tailored disclosure requirement for venture capitalists. It would also require that venture capitalists change the disclosure schemes they currently use, as exemplified in their promotional literature. These disclosures actually provide facts that are not consistent with the true nature of the transactional context and have the negative effect of *increasing* and not decreasing entrepreneurial divergent expectations.

The next Section discusses these affirmative disclosures made in the venture capital promotional literature and provides some legal arguments for curtailing it. The following Section then addresses the potential legal bases for providing an entrepreneur with an affirmative duty to disclose. The final Section addresses the last part of the belief revision procedure: the *use* by entrepreneurs of disclosed information as evidence to revise their beliefs. This requires disclosure tailored to deal with the issue of entrepreneurial over-optimism.

b. Venture Capital Representations in the Promotional Literature: "Puffing" or Misrepresentation?

The excerpts from the venture capital promotional literature set forth in Part II, as well as the excerpts set forth in this Section, show that the voluntary disclosures made by venture capitalists contradict facts regarding the true nature of venture capital transactions. For example, the promotional literature makes no mention of the founder's disease issue, but instead makes contrary statements, such as "we do not invest in any opportunity with the intention of replacing the manager."³³⁶ By taking control of the venture, a venture capitalist in essence transforms its relationship with the entrepreneur into a majority/minority

335. POSNER, *supra* note 334, at 111 (arguing that the informational burden should be placed on the party who "can produce, convey, or obtain the pertinent information" at a lower cost).

336. See Draper Fisher Jurvetson, *Investment Philosophy*, at http://www.dfj.com/about/about_philosophy.html (last visited Jan. 18, 2002).

shareholder relationship as well as an employer/employee one. However, as the excerpts below show, the promotional literature repeatedly characterizes the relationship as one among "partners."

Menlo Ventures:

You need a financial partner with experience taking emerging growth companies to their full potential. A partner who can help define strategy, recruit the best management talent, forge industry partnerships and corporate alliances, and attract investment capital. You also want a committed partner who will work with you and for you.³³⁷

Draper Fisher Jurvetson:

[We]provide more than money. A start-up venture capitalist becomes a company's financial strategist, headhunter, investment banker, and corporate therapist, who provides support and confidence to a fledgling team. As a board member, we are active, and we have the energy, experience and contacts to help take the company to the next stage and beyond.³³⁸

New Enterprise Associates:

All venture capitalists are investors; not many define themselves as partners. NEA shares the entrepreneur's vision and usually works with the company for five to seven years to achieve long-term success. We see ourselves as capital partners, not just investors.³³⁹

Accel Partners:

Your process of selecting a venture firm is, therefore, much more analogous to the selection of key managers in your company than it is to the selection of a bank for a loan. With a banker, the appropriate question is "How much money will he give me?" With a venture firm, the right question is "How much money will he make me?"

337. Menlo Ventures, *26 Years of Turning Visions into Reality*, at <http://www.menloventures.com/index.html> (last visited Mar. 16, 2002).

338. Draper Fisher Jurvetson, *Investment Philosophy*, at <http://www.dfj.com/about/aboutphilosophy.html> (last visited Feb. 13, 2002).

339. New Enterprise Associates, *About NEA*, at <http://www.nea.com/Strategies/Strategies> (last visited Mar. 8, 2002).

This is because your venture firm, if used effectively, will be an important element in the continuous decision making process of your company.³⁴⁰

As a general rule, a party who is under no duty to disclose, but who discloses voluntarily, must make full and complete disclosure.³⁴¹ While these excerpts can be carefully parsed and labeled as opinions or puffing, our concern here is not whether these statements are legally actionable, but whether, when embedded in the broader transactional context, these statements tend to increase entrepreneurial divergent expectations.

c. Constructing a Venture Capitalist's Affirmative Duty to Disclose

This Article argues that venture capitalists, as the cheapest producers of the information useful in revising entrepreneurs' mistaken beliefs, should have a clear-cut duty to disclose that information. This disclosure requirement can be judicially crafted, using as a starting point one or more of the three theories set forth below. There will be costs associated with the required disclosure, as there are with any disclosure scheme. However, the main cost—litigation—can be reduced with a properly crafted safe harbor scheme to reduce strategic litigation by entrepreneurs.³⁴²

340. Accel Partners, *Accel Articles: Advice for First Time Entrepreneurs*, at <http://www.accel.com/entrepreneurs/advice.html> (last visited Mar. 8, 2002).

341. *V.S.H. Realty, Inc. v. Texaco, Inc.*, 757 F.2d 411, 414 (1st Cir. 1985) (stating that when a party discloses partial information that may be misleading, that party has a duty to disclose all material facts that it knows in order to avoid misleading the other party); *Pashley v. Pacific Elec. Co.*, 153 P.2d 325, 330 (Cal. 1944) (providing that a party who does not owe a fiduciary duty to disclose must disclose the whole truth if it volunteers disclosure); *Nicholson v. Kellin*, 481 So. 2d 931, 936 (Fla. Dist. Ct. App. 1986) (same). For a discussion of the relationship between lying and materiality, see *Basic Inc. v. Levinson*, 485 U.S. 224, 237-38 (1988) (finding a denial of merger negotiations in a case where one party publicly denied that such discussions were taking place).

342. For example, one analogue is the "bespeaks caution" doctrine, a judicially-created safe harbor to encourage disclosure of forward-looking information appropriately accompanied by "meaningful cautionary statements" about the risks associated with forward-looking statements. See, e.g., *Shapiro v. Cantor*, 123 F.3d 717, 719, 721 (2d Cir. 1997); *Grossman v. Novell, Inc.*, 120 F.3d 1112, 1120 (10th Cir. 1997); *In re Burlington Coat Factory Sec. Litig.*, 114 F.3d 1410, 1418 (3d Cir. 1997); *Shaw v. Digital Equip. Corp.*, 82 F.3d 1194, 1213 (1st Cir. 1996); *Saltzberg v. TM Sterling/Austin Assocs. Ltd.*, 45 F.3d 399, 400 (11th Cir. 1995).

As a general rule, two sophisticated parties bargaining at arm's length are under no duty to make affirmative disclosures of facts material to the bargain.³⁴³ However, one can argue that venture capitalist-entrepreneur relationships diverge from this general rule in three ways. First, a duty to disclose does arise when a confidential or fiduciary relationship exists between the parties, or where one party justifiably believes that the other is looking out for her interests.³⁴⁴ The relationship between venture capitalists and entrepreneurs is not a true arm's-length relationship but is more akin to a fiduciary one. As a general rule, promoters of a corporation owe a fiduciary duty to each other.³⁴⁵ Additionally, since venture capitalists control the venture, they owe a fiduciary duty to the minority shareholder, the entrepreneur, during the life of the venture.³⁴⁶

Secondly, the general non-disclosure rule is based on an assumption that both parties are "sophisticated" parties.³⁴⁷ However, it is difficult to characterize entrepreneurs as "sophisticated" parties, given their general over-optimism and lack of experience dealing with highly complex venture capital financings. Thirdly, in contractual contexts in which one party possesses material information not readily available to

343. See *Laidlaw v. Organ*, 15 U.S. (2 Wheat) 178, 195 (1817) (where information is equally accessible to both parties, there is no duty to disclose); *Original Great Am. Chocolate Chip Cookie Co. v. River Valley Cookies, Ltd.*, 970 F.2d 273, 280 (7th Cir. 1992); *Banque Arabe Et Internationale D'Investissement v. Md. Nat'l Bank*, 819 F. Supp. 1282, 1290 (S.D.N.Y. 1993). There is conflicting authority, however, in the franchise context. See *Arnott v. Am. Oil Co.*, 609 F.2d 873, 883 (8th Cir. 1979) (duty to disclose); *Rosenberg v. Pillsbury Co.*, 718 F. Supp. 1146, 1154-55 (S.D.N.Y. 1989) (no duty to disclose).

344. See *Cent. States Stamping Co. v. Terminal Equip. Co.*, 727 F.2d 1405, 1409 (6th Cir. 1984); *Speed v. Transamerica Corp.*, 99 F. Supp. 808, 846-47 (D. Del. 1951) (discussing the duty to disclose to preferred stockholders before redemption); *Umbaugh Pole Bldg. Co. v. Scott*, 390 N.E.2d 320, 323 (Ohio 1979).

345. See, e.g., *Powers v. Ryan*, No. Civ. A. 00-10295-00, 2001 WL 92230, at *2 (D. Mass. Jan. 9, 2001) (stating that "promoters of a corporation owe each other a fiduciary duty, which can survive the formation of the corporation"); *Bivens v. Watkins* 437 S.E.2d 132, 135 (S.C. Ct. App. 1993) (finding that a promoter owed a fiduciary duty to a minority shareholder, arising out of a confidential relationship and "a duty to act in good faith and with due regard to [the minority shareholder's] interest in the formation and start-up of the corporation;" and this duty is independent of the fiduciary duty that the promoter, as majority shareholder, owed to the minority shareholder).

346. On the fiduciary duty owed by a majority shareholder to minority shareholders, see generally *Rosenblatt v. Getty Oil Co.*, 493 A.2d 929, 937 (Del. 1985); *Weinberger v. UOP, Inc.*, 457 A.2d 701, 703, 710 (Del. 1983).

347. See, e.g., *Langevoort*, *supra* note 180, at 635-41 (discussing various "cognitive illusions" that may lead even sophisticated investors to purchase overly risky securities).

the other party, there exists a general duty to disclose if the party with superior information knows, or has reason to know, that the other party is acting under a mistaken belief regarding that information.³⁴⁸ Venture capitalists, as repeat players, have superior information regarding, at the very least, the essential transactional risks. Moreover, venture capitalists know that, due to their over-optimism, entrepreneurs are likely to have mistaken beliefs regarding these transactional risks.

d. Venture Capitalists Have Little Incentive to Make Voluntary Disclosures

Venture capitalists have little incentive to voluntarily make the type of disclosure described in this Article. The best evidence of this is that their current disclosure—their promotional literature—has the negative effect of actually increasing divergent expectations, not reducing them. Additionally, venture capitalists do not share a strong motivation to compete among themselves by disclosing information regarding entrepreneurial transactional risks. This is because such disclosure may lead some entrepreneurs to not transact with venture capitalists, or it may require the rearranging of the transaction so that the entrepreneur receives a larger share of potential surpluses.³⁴⁹

Moreover, a venture capitalist that voluntarily and single-handedly discloses information regarding contractual risks may not be able to adequately compete with venture capitalists that do not disclose such information. For example, a venture capitalist that is unlikely to act

348. See *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. First Nat'l Bank of Little Rock, Ark.*, 774 F.2d 909, 913 (8th Cir. 1985); *Aaron Ferer & Sons Ltd. v. Chase Manhattan Bank*, 731 F.2d 112, 123 (2d Cir. 1984); *Mann v. Adams Realty Co.*, 556 F.2d 288, 297 (5th Cir. 1977); *U.S. Concord, Inc. v. Harris Graphics Corp.*, 757 F. Supp. 1053, 1057 (N.D. Cal. 1991); *White v. Pepin*, 561 A.2d 94, 96 (Vt. 1989); *Haberman v. Wash. Pub. Power Supply Sys.*, 744 P.2d 1032, 1069 (Wash. 1987).

349. See, e.g., POSNER, *supra* note 334, at 111 (arguing that competition among firms may lead some firms to expose false claims made by competitors, the same does not hold true when the fact about a product to be disclosed applies to all companies in the industry); Cass R. Sunstein, *Informing America: Risk, Disclosure, and the First Amendment*, 20 FLA. ST. U. L. REV. 653, 656 (1993) (arguing that manufacturers of hazardous products, such as cigarettes, may not have great incentives to disclose information regarding these hazards, since doing so might lead to fewer sales); Alan M. Weinberger, *Let the Buyer Be Well Informed?—Doubting the Demise of Caveat Emptor*, 55 MD. L. REV. 387, 388 (1996) (arguing that the requirement that a seller of real estate engage in blanket disclosure of latent defects may avoid subsequent litigation, but “unnecessary disclosure of negative information may place the seller at a competitive disadvantage, perhaps to the point of jeopardizing the transaction”).

opportunistically would not have an incentive to disclose information about entrepreneurial contractual risks and the general ability of venture capitalists to act opportunistically. This is because the venture capitalist will be unable to prove to a potential entrepreneur that it is the type of venture capitalist that does not act opportunistically, and that its competitors *are* opportunistically-minded venture capitalists. Merely saying so will not convince an entrepreneur. In other words, without changing the venture capital contract to constrain its ability to act opportunistically, the disclosing venture capitalist will not be able to credibly signal to the entrepreneur that it will not act opportunistically. In short, it will not be able to differentiate itself from other venture capitalists.

3. DISCLOSING TO OVER-OPTIMISTIC ENTREPRENEURS: SEVERAL MECHANISMS FOR GETTING INFORMATION THROUGH TO OVER-OPTIMISTIC PARTIES

The last part of the belief revision procedure set forth above requires that once an entrepreneur receives information disclosed by venture capitalists, she must be able to put it into *use* to revise her beliefs. Over-optimism, however, may lead an entrepreneur to discount or not use that information or to interpret it in a biased fashion that would at best make it useless and at worst could lead to the reinforcement of false beliefs or the acquisition of new false beliefs.³⁵⁰

Unfortunately, overcoming a party's over-optimism is not as simple as recognizing its existence.³⁵¹ That notwithstanding, it has been shown

350. Entrepreneurs who are highly-optimistic will likely not be affected by the disclosure. It does not follow from this that only highly-optimistic entrepreneurs will seek venture capital financing. In order for that to be true one would have to assume that the only reason that entrepreneurs now seek venture capital financing is due to their over-optimism. Such a claim has not been made in this Article. Additionally, it also does not follow that an unmanageable adverse selection problem will arise. This is for two reasons. First, entrepreneurial over-optimism creates both benefits and costs for venture capitalists. Over-optimism regarding the prospects of the innovation may lead entrepreneurs to overstate the case for their innovation, thereby increasing the risk for the venture capitalist. Over-optimism regarding the innovation or regarding her potential managerial skills may at the same time lead entrepreneurs to persevere and work harder in the face of adversity. Secondly, less optimistic entrepreneurs will have an incentive to provide more concrete evidence regarding the prospects of the innovation in order to separate themselves from more optimistic entrepreneurs. This dynamic should benefit venture capitalists since the additional evidence provided by the less optimistic entrepreneur will reduce venture capitalist informational asymmetry.

351. See, e.g., Baruch Fischhoff, *Debiasing*, in JUDGMENT UNDER UNCERTAINTY:

that carefully crafted risk disclosure is generally effective in making parties cognizant of the hazards associated with dangerous products.³⁵² In other words, risk disclosure can help alter the initial beliefs of parties, leading them to undertake appropriate precautions and/or demand a higher return for undertaking a greater amount of risk.³⁵³ Although there are imperfections with relying primarily on a disclosure approach, disclosure is generally a better first approach, than for example, restricting product use³⁵⁴(although disclosure will not be sufficient to deal with potential market failures in some instances, and substantive regulation may be required). Additionally, studies on workplace dangers have found that while workers may take a job with imperfect information regarding work hazards, they will generally be able to learn as they acquire new information, adapting to the hazards where possible or quitting the job where the hazards are sufficiently problematic.³⁵⁵

One method used to counter over-optimism is for a better-informed party to set forth potential counterarguments, in order to challenge the other party's over-optimistic assessments.³⁵⁶ Going over the risk factors found in prospectuses of generic initial public offerings of high-tech start-ups may help to greatly reduce entrepreneurial over-optimism. This is because the risk factors required by securities laws carefully set

HEURISTICS AND BIASES, *supra* note 68, at 422, 431-40 (discussing various techniques to deal with overconfidence and concluding that debiasing techniques have generally run into a variety of roadblocks). For a discussion of the role of debiasing, see, for example, Daniel Kahneman & Amos Tversky, *Intuitive Prediction: Biases and Corrective Procedures*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, *supra* note 68, at 414, 417-21 (debiasing through, among other things, eliciting from experts information that they would otherwise generally neglect). For a discussion of some of the difficulties in overcoming cognitive biases generally, see Rabin, *supra* note 250, at 31-32.

352. See W. KIP VISCUSI & WESLEY A. MAGAT, *Implications for Economic Behavior*, in LEARNING ABOUT RISK 125, 125-26 (1987).

353. *Id.*

354. *Id.* at 126. Corporate law from *Meinhard v. Salmon* to *Smith v. Van Gorkom* has generally opted for choosing a disclosure-based system when at all possible. See *Meinhard v. Salmon*, 164 N.E. 545 (N.Y. 1928); *Smith v. Van Gorkom*, 488 A.2d 858 (Del. 1985). Notwithstanding the broad language in Justice Cardozo's *Meinhard* opinion, it appears from the decision that the main harm that Justice Cardozo objected to was the nondisclosure of the corporate opportunity. 164 N.E. 545.

355. See, e.g., W. Kip Viscusi & Charles O'Connor, *Hazard Warnings for Workplace Risks: Effects on Risk Perceptions, Wage Rates, and Turnover*, in LEARNING ABOUT RISK, *supra* note 352, at 98, 100-01.

356. See J. Edward Russo & Paul J. H. Schoemaker, *Managing Overconfidence*, SLOAN MGMT. REV., Winter 1992, at 7, 12.

forth the potential risks associated with investing in the start-up, which even at the time of the IPO are still significant. In other words, if the risks associated with the venture at the time that the company goes public are high, the risk at the time of the initial venture capital investment will be greater. While this type of disclosure does not deal with the potential risks associated with false beliefs regarding the venture capitalist, it can help reduce other types of entrepreneurial over-optimism.

A related approach is to ask the over-confident entrepreneur to set forth the pros and cons associated with the transaction.³⁵⁷ Generally, a discussion regarding the potential negative aspects associated with a transaction will be most useful in helping a party overcome her over-optimism.³⁵⁸ A third method would be to provide the overconfident entrepreneur with accelerated feedback regarding the overconfident claims of entrepreneurs.³⁵⁹ Given that entrepreneurs and venture capitalists bargain over a period of time before they enter into venture capital contracts, it is possible to use such a feedback mechanism during the different phases of bargaining to make the entrepreneur cognizant of her over-optimism.

C. Reactions of Entrepreneurs to the Reduction of Divergent Expectations

The goal of reducing divergent expectations is to minimize the costs associated with entrepreneurial strategic behavior and the costs from misallocated resources, as described above. In this Section, I discuss potential reactions of entrepreneurs to the belief revision mechanism discussed in the prior Section. It is useful to start our analysis with an entrepreneur who, whether due to venture capital disclosure or otherwise, has no divergent original expectations—i.e., who holds only true beliefs about the transaction. Such an entrepreneur can choose to (1) forego a transaction with the venture capitalist, (2) delay entering into a transaction, or (3) enter into the transaction immediately, understanding the risks she faces.³⁶⁰

357. *Id.* at 13.

358. See, e.g., Stephen J. Hoch, *Availability and Interference in Predictive Judgment*, 10 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY, & COGNITION 649 (1984).

359. Russo & Schoemaker, *supra* note 356, at 12.

360. Since venture capital contracts are non-negotiable, the entrepreneur who enters the transaction will be subject to the provisions described in Part I. Of course,

1. FOREGOING A TRANSACTION WITH A VENTURE CAPITALIST

An informed entrepreneur can choose not to enter into a venture capital transaction and instead allocate her human capital in any of the following ways: (1) staying in her current job or in school; (2) continuing the innovation on her own, using non-venture capital funds, such as her own; or (3) stopping work on the innovation altogether. I already discussed some of the potential benefits of entrepreneurs staying with their current employer or in school.

If an entrepreneur were to stop working on the innovation altogether, doing so can prove socially costly if a socially beneficial innovation is ultimately never completed. However, there are a number of countervailing factors that reduce the possibility of such a result. First, while an entrepreneur may choose to stop working on the innovation, she may sell the right to it to a third party who can continue development. An entrepreneur may do this either to get some salvage value from the innovation or because she would get some other utility from seeing the innovation finished. Secondly, an entrepreneur may choose to sell or transfer the rights of the innovation to her current employer, or if she is in academia, to make it available to colleagues.

2. WAITING CAN PROVIDE A VALUABLE CALL OPTION TO ENTREPRENEURS

Due to the high cost of exit, an entrepreneur's decision to enter into a transaction with a venture capitalist is effectively irreversible. Thus, waiting before entering into a transaction provides the entrepreneur with a valuable call option.³⁶¹ Delaying a transaction with a venture capitalist

once entrepreneurs are better informed about the true nature of the transaction, some venture capitalists may agree to change certain contractual provisions in order to encourage "good" entrepreneurs to enter into transactions, but that is beyond the scope of this Article.

361. This call option is analogous to the call option that venture capitalists get when they use staged financing. Given the symmetrical nature of the potential options to an entrepreneur and to the venture capitalist, choosing which of the two types of options actually produces greater value should be based on criteria such as whether the entrepreneur can afford to hold the option—for example, if she is wealth-constrained. (This may be the case more often in biotech ventures than in other high tech ventures where the up front costs of finishing the innovation are not as high.) A decision on whether the entrepreneur's or the venture capitalist's option should be privileged should not purely depend on wealth redistribution factors, such as having an over-optimistic entrepreneur enter into venture capital contracts without being fully informed, but on factors such as which option is more valuable. In cases where the venture capitalist's

allows an entrepreneur to acquire information about the viability of the innovation and about her managerial skills. At any point in time an entrepreneur can choose to stop the innovation process (if the innovation turned out not to be viable), enter into a transaction with a venture capitalist, or sell the innovation to a third party.³⁶² Additionally, delay allows an entrepreneur to spend more time finishing the innovation under self-imposed budgetary constraints.

Once the innovation is closer to the marketing stage, an entrepreneur may be in a better bargaining position vis-à-vis the venture capitalist because there will be fewer innovation-related risks, and because the entrepreneur may have been able to “propertize” her innovation through patents or other intellectual property (which, among other things, would help reduce potential entrepreneurial hold-up). The venture capitalist should then be able to value the innovation more precisely and to better delineate the entrepreneur’s role.³⁶³

3. ENTERING INTO A TRANSACTION WITH A VENTURE CAPITALIST WHILE BEING AWARE OF CONTRACTUAL RISKS

If a fully informed entrepreneur decides to enter into a transaction with a venture capitalist, one would expect that the retaliatory strategic behavior that we have been discussing would disappear. This is because what was motivating retaliation was the existence of divergent original expectations.³⁶⁴ One would also expect that the parties will find it easier to coordinate their actions, given that their knowledge and information about the transaction and the expected actions of the other are more congruent.³⁶⁵ Moreover, as mentioned above, entrepreneurs who perceive a “fair” action by the venture capitalist—e.g., full disclosure—may reciprocate and act more fairly themselves. This can lead to

capital is actually needed to continue the innovation, the venture capitalist’s option may be more valuable; in cases where the venture capitalist’s investment is not immediately needed, the innovator’s option may be more valuable.

362. This would be equivalent to selling the innovation to the venture capitalist and becoming a passive shareholder in the venture (the shares would be part of the compensation for selling the innovation).

363. At this stage, it may make sense to directly hire professional managers to run the venture.

364. This does not mean that retaliation will not re-emerge as the parties interact during the life of the venture. My concern in this Article has been with retaliation stemming from unfairness at the time of contracting.

365. The incentive mechanisms in venture capital contracts should also work more effectively, given that the entrepreneur is better informed about how her actions interact with these incentive mechanisms.

increased cooperation within the venture.

An entrepreneur who enters into a venture capital transaction may choose to hedge some of the founder's disease risks by giving up the CEO position up front and taking a position with the venture for which she is better suited. For example, an entrepreneur may choose to take the position of chief technology officer or chief scientist. These are positions in which the entrepreneur should have a comparative advantage. Thus, disclosure at the time of contracting can lead to a better allocation, within the firm, of the entrepreneur's human capital.

VII. CONCLUSION

In this Article I address three principal questions regarding venture capitalist-entrepreneur relationships, motivated in part by the rise and fall of the New Economy: (1) How do we factor into a theory of venture capital contracting the well-documented behavioral psychology findings that entrepreneurs tend to be much more overconfident and over-optimistic than non-entrepreneurs? (2) What institutional components play a role in destabilizing start-ups, increasing the probability that otherwise viable ventures with socially valuable innovations will fail? (3) What are the social costs associated with the current methods used by venture capitalists to finance entrepreneurs?

When we look at venture capital contracts from the point of view of both venture capitalists and entrepreneurs, we realize that informational problems affect both parties. The venture capital literature has focused on the informational asymmetry faced by a venture capitalist when it transacts with an entrepreneur. However, as I argue in this Article, we need to pay close attention to the symmetrical problem—the informational disadvantage in which an entrepreneur finds herself when she deals with a venture capitalist. An entrepreneur will not know a lot of important information about the venture capitalist and, more importantly, about the venture capital process. Not having such information affects the ability of an entrepreneur to properly value venture capital contracts.

This Article's principal argument is that the level of mistaken beliefs of an entrepreneur at the time of contracting (her divergent original expectations) matters. It matters because original expectations provide an important frame through which an entrepreneur makes judgments about the contractual risks involved in the transaction, and through which she judges the actions of venture capitalists. Entrepreneurs, I argue, will have an incentive to engage in two types of strategic behavior in reaction to entering a transaction while holding incorrect beliefs regarding the transactional context. First,

entrepreneurs will have an incentive to engage in self-preserving strategic behavior; to reduce, after the fact, unexpected contractual risks. The Article introduced the behavioral psychology literature on reciprocal fairness and retaliation to identify a second type of entrepreneurial behavior: retaliation. Both types of strategic behavior are inefficient in that they impose deadweight costs on the venture. Moreover, to the extent that these behaviors increase the probability that an otherwise viable venture will fail, they impose additional costs on society.

Under the analysis set forth in this Article, we can understand in a new light several commonly observed practices or traits of entrepreneurs. One is the fact that entrepreneurs usually do not want to delegate to others within the venture, even after the venture has grown to a size where delegation makes sense. This is usually described in the literature (and by venture capitalists) as a perfect example of the “founder’s disease,” or the inability of the entrepreneur/founder to learn the art of managing, which of course includes delegating. However, under our theory, an entrepreneur’s unwillingness to delegate makes perfect sense: it is a way of holding back information, a survival strategy. It is also a form of retaliation.

Another commonly observed phenomenon is what venture capitalists call the “better mousetrap” fallacy: the belief by entrepreneurs in technically-oriented ventures that if they can just perfect the product enough, if they can produce the perfect radical new innovation, the product will sell itself. What this means from the venture capitalist’s point of view is that the entrepreneur will continue to tinker with the innovation, trying to perfect it instead of trying to market it. Building the perfect mousetrap, however, may not be fallacious after all, but may be just another way for entrepreneurs to increase their tenure with the venture. This is especially true once the innovation is finished, and the venture has entered into the marketing phase, at which time the entrepreneur will become expendable. Building the perfect mousetrap is also a way for the entrepreneur to slow down the evolution of the firm in order to give her more time to acquire managerial skills. (In fact, various empirical studies have shown that the faster a venture grows, the more likely it is that the founder will be fired.)

Finally, it has been observed that entrepreneurs often engage in “satisficing” behavior, content with “living dead” status—ventures that are profitable but do not have a growth rate adequate to allow the venture capitalist to carry out an initial public offering. Again, so-called “satisficing” can be seen as both a retaliation and a survival strategy, a way an entrepreneur can get her innovation out to market, while trying to reduce the probability that she herself will be put out into the

marketplace. As several venture capitalists interviewed in an empirical study noted:

“living dead” status [is] not always viewed as a disaster by investee founders. Some founders may be secretly relieved that their company is not going to grow so large that technologically focused founders will have to be supplanted by market or financially oriented managers.³⁶⁶

The fact that entrepreneurs do not contract for protection in venture capital contracts does not mean that they are not interested in protecting themselves against the contractual hazards that they face. On the contrary, one can expect that an entrepreneur will continue to be concerned about these contractual hazards—in fact, that she will become more keenly aware of them as time goes on. If an entrepreneur fails to deal with these hazards *ex ante*, she will certainly deal with them *ex itinere* and *ex post*.

366. Ruhnka et al., *supra* note 55, at 145.