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Visions of the Future

UNCERTAINTY AND VIRTUE IN THE WORLD OF HIGH-TECH AND VENTURE CAPITAL

Inspiration in the field of science by no means plays any greater role, as academic conceit fancies, than it does in the field of mastering problems of practical life by a modern entrepreneur.

Max Weber, *Science as a Vocation*

SOMETHING VENTURED

Normative uncertainty has its varieties and its degrees. At one end, the preparation of a Big Mac or the filing of a medical insurance claim is subject to very great organizational specificity and routine, though even here there is no way exhaustively to spell out all the features of right action and how they are to apply in all circumstances. At the other extreme are many of the courses of action involved in the making of late modern technoscientific artifacts, techniques, and knowledges. Here, right actions can rarely, if ever, be prescribed from an institutionalized template, and the pertinence of any preexisting template is problematic. The closer you get to the leading edges of technoscientific change, the greater the degree of normative uncertainty: What is proper behavior for a scientist and a manager in a start-up biotech company? How does one arrange inquiries and lines of authority and responsibility within that sort of organization, indeed what kind of organization *is* it? Will there be a market for a product that is not an improved razor blade—which people are reasonably believed to want—but a disruptive technology that is a substantially new thing in the world, that people at the time of an investment decision do not *know* they want? The future is unpredictable in principle. As David Hume showed in the eighteenth century, you cannot *prove* that the Sun will rise tomorrow, or even that there will be death and taxes. There are, however, certain sorts of activity in the late modern world that engage with future uncertainties in highly focused, systematic, and consequential ways and in which those uncertainties are massive. It is in these sorts of activities that people often become reflectively aware of the conditions

of uncertainty and strive to manage them. This chapter is concerned with the practicalities of uncertainty management in the worlds that bind scientific entrepreneurs to the sources of capital for turning entrepreneurial ideas into concrete realities. It is about "venture capital," about how venture capitalists (VCs) confront radical uncertainties, and, especially, about how the virtues of familiar people figure in the operation of what, by some accounts, is the most ruthlessly instrumental sector of late modern capitalism and late modern technoscience. How do VCs go about deciding which early-stage high-tech companies will be successes? How do they make up their minds to write a check for several million dollars, the outcome of which may be a drug that cures cancer, or nothing at all—a waste of investors' money? We will see that judgment in these worlds of leading-edge technoscience and finance often implicates knowledge of the virtues of familiar people. People and their virtues *matter*—and that mattering is absolutely central to the rationally calculative worlds where late modern finance meets technoscience.

The world occupied by VCs and the entrepreneurs seeking their support is not one in which distinctions between "science" and "technology," or, indeed, between doing science and doing business, are consequential actors' categories. Of course, every competent member of that world has occasions to parse the notions of "science," "technology," and "business." Every one of them is familiar with the stages that may link, at one end, more or less disinterested inquiry, and, at the other, a product on the market helping cure cancer and contributing to a company's bottom line; everyone understands that what's published in the journals is "science" and what's put in a business plan are some details that may or may not be "science"; and everyone knows that there are institutions called universities and institutions called companies, and that these differ in all sorts of pertinent respects, just as they resemble each other in other respects. However, they are also quite generally aware that these categories do not have species essences and little of their communal speech seems to depend upon making crucial distinctions between them. They are not, in general, very interested in such distinctions. Put the questions "What is the difference between science and technology, between pure research and applied research, between science and business?" to typical members of this world, and you will, as likely as not, get blank looks in reply. What VCs and entrepreneurs seem to understand is that one may want to do science in order to get a product into the world; one may realize that getting a product into the world involves the doing of science; one may think that getting products into the world permits more and better science to

be done; and one may function in a world in which being a good scientist is signified by patents held and companies founded. Where is science? Where is technology? Where is business? Substantially, they are in the same place. This is late modern technoscience in a fully realized form. And it is also a world in which normative uncertainties flourish in uniquely intense and consequential forms. The world of VC-backed science and technology lies at the cutting edge of late modern change; it is future making; it is hard and instrumental; it is the engine of the capitalist economy and its ever-changing bases. So it is a perspicuous, if seemingly paradoxical, place to pose questions about patterns of familiarity and about the attribution of virtues to familiar people.

Gambling is a traditional activity, but it was not until fairly recently that there were such people as venture capitalists in the world. In all cultures and at all times people have staked money on inherently unknowable futures, hoping to benefit from outcomes they can do little, if anything, to affect. Sometimes gamblers are aware that they are simply exposing themselves to the fates, spinning Fortune's Wheel; sometimes they think that they have, or can get, an edge on the future—that they know something that others don't know about how things will turn out; sometimes too these people think that they have special expertise in predicting the future, that there are learned skills or aptitudes that allow them to pick winners. Such people include both bettors at a horse race and VCs, and occasionally both groups offer commentary on how to be successful in predicting radically uncertain futures.[1] And sometimes that commentary constitutes a more or less reliable account of aspects of how they actually do behave, how they decide where to place their wagers on radically uncertain futures. More rarely, interested observers can directly check such commentary against evidence deriving from the scenes in which judgment happens.

Venture capital is a form of private finance. Its practitioners tend to specialize in bringing new businesses into the world, financing start-up companies in high-tech and biotech, but they may also invest in other sorts of companies. Private finance is typically called upon when the business is too risky to be taken on by banks or traditional sources of public capital. It is estimated that there are about 3,500 VCs in the U.S., managing over $100 billion of assets (both numbers vary wildly from source to source). And if you are a VC, then your life is structured by the exercise of predicting what you know to be the highly, even impossibly, unpredictable, most especially when you are dealing with early-stage companies, doing what's called "seed investing" or even a "first-round."[2] You

may appreciate that your previous experience will be of limited use, as each new venture presents its special challenges and problems—the more so if the venture is a step into the radically unknown.[3] Envisaging what the wireless communications future will be like and which companies will succeed in that future isn't much like opening a new McDonald's franchise. Venture capital is *such* an uncertain world that one highly successful VC described it as "a perpetual stroll into the fog," and another complained that his first fund was referred to by critics as "a sociology experiment."[4] But if you're a VC, that's what you do, and, if volumes of internal and external commentary are worth anything at all—and they may or may not be—some VCs are good at doing this impossible thing and others are not so good at it.

Spectacular successes are well advertised: particular investments multiplied by thirty, sixty, hundreds of times when a start-up company goes public or gets taken over by a larger company. But reliable statistics on these things are hard to come by, and even harder to interpret when you do come by them. (VC firms package their individual investments into "funds" whose assets have to be realized at a certain set time, typically five to ten years after launch. VC funds are private and largely unregulated. Firms are under no obligation to publish information about the performance of their funds, and most make their investors sign nondisclosure agreements [NDAs], a condition that has only recently been breached by university and state pension investors, under pressure from the leading Silicon Valley newspaper, the *San Jose Mercury News*, and the *Houston Chronicle*.)[5] Even the best VC firms acknowledge that successful investments—by most criteria of "success"—are far outnumbered by failures. Amy Radin, a Citygroup in-house VC, asserts that "we are building failure into the model."[6] One of the most respected VCs, Tom Perkins of Kleiner Perkins, once described one of his firm's first funds as "a barrel full of piss with a couple of cherries floating in it."[7] But the preferred metaphorical genre in the VC world is baseball: "home runs" (or even "grand slams") are what you're really looking for, hoping that the occasional home run will more than compensate for the many strikeouts.[8] Benno Schmidt, one of the founding fathers of venture capital, said that "we don't live so much on our batting average as our slugging average... We live off our extra-base hits."[9] Going for the big rewards necessarily implies a high failure rate. VCs are all in a high-risk business, but both individuals and VC firms naturally vary in style. As the San Diego biotech entrepreneur-turned-VC Ivor Royston puts it, "You can't get home runs without striking out. Babe Ruth taught us that... So you can either be a venture capitalist that hits singles all the time—very low-level risk—or you can take that big leap—go for the home run or something very—maybe, you know, a major paradigm shift, something very novel, extraordinary. Tremendous risk, but you're going to hit [the] ball out of the park. That's what I do."[10] (Recently, the baseball metaphor took a literal form when a group of private investors—including VCs "playing with their own money"—got together to finance an independent baseball league. Some of them viewed the investment as a bit of fun, while others stuck with a tempered form of the traditional VC ambition: "I know some people expect this thing to be a home run... But me, I'd settle for a ground-rule double.")[11]

A quoted rule of thumb is that three out of every ten VC investments are total losses; three carry on a marginal existence but present difficulties in extracting the original investment (often referred to as "the walking—or living—dead"); two give returns of 200–300%; and two yield more than ten times the original investment.[12] Horsley Bridge Partners, which manages private equity investments for institutions and pension funds, placed money in about sixty VC funds from 1985 to 1996, and of these funds' investments in 1,765 companies, 278 (16%) were write-offs, 330 (19%) were liquidated below cost, 685 (39%) returned profits of 100–500%, 136 (8%) of 1,000–2,500%, and only 89 (5%) more than 2,500%. So picking big winners—even during the fat years of the late 1990s—was an extremely difficult thing to do.[13] Some commentators say that VCs aim at "a reasonable possibility" of multiplying their original investment in a firm by five or ten times within five years. The Silicon Valley VC Jim Breyer (of Accel Partners) says that "we always go into a deal hoping to make ten times our money" over the course of the investment.[14] That means VCs are looking for a 20–40% annual return over the life of funds, though the major trade association's figures show a 26% average return to investors through the 1990s.[15] During the technology boom of the 1990s, a small number of VC firms yielded returns for their investors of over 100% a year: the celebrated Kleiner Perkins Caufield & Byers of Palo Alto made a 287% "internal rate of return" (IRR) on its 1996 fund, and Matrix Partners' 1997 fund returned an astonishing 516% a year, while by 2003 most funds invested at the height of the high-tech bubble were "underwater," showing negative returns, and, when they came to be liquidated, almost certainly lost much, if not most, of their investors' capital.[16] Venture capitalists do not have to "play with their own money," though many of them have some investments in their funds. They are the "general partners" and the wealthy individuals and institutions who invest

in their funds (including pension funds and university endowments) are known as "limited partners." The limited partners expect high returns from the funds and, in that expectation, they pay high fees. VC firms take an annual management fee of 1.5 to 3% on funds committed, plus a "carry" (or percentage taken on total fund returns) of 20–35%, where the higher carry has been demanded only by such "star" VC firms as Kleiner Perkins, Sequoia, Accel, and Benchmark. A normal formula is known as "two and twenty"—a management fee equal to 2% of committed capital and 20% of net profits. For VCs, the carry represents their major material interest in funds' success, and the willingness of limited partners to pay such sizeable fees represents their expectation that these investments will radically outperform safer alternatives.[17] Being good at being a VC is not easy, and most—including many of those who exude confidence in their skills and boast of their achievements—are not good. Of course, actual results will look better or worse according to what fund you pick, and, as we all now know, what time period you select. During the boom years of dot-com investing in the late 1990s, VCs justified the commitment of large sums to companies that had no revenues, and sometimes not even a plausible business model, by invoking the tag "if you snooze you lose."[18] But the question with which this chapter is concerned is not how VCs make good rather than bad decisions; rather, it is about how they do whatever it is they do. What do VCs *think* they're doing when they *think* they're doing it pretty well? And how, so far as one can judge, do they *actually* confront the radical uncertainties of the world in which they've chosen to make their living?

The dot-com bust of spring 2000, with its abrupt and precipitous decline in high-tech share prices, did indeed have a massive effect on the environment in which VCs operated. 2000 marked a historic high point both in the number of deals done by American VCs and in the sums invested: 7,813 deals totaling over $104 billion. In 2001, the number of deals dropped by almost a half and the capital committed declined by more than 60%. A more gradual decline then followed, until a revival commencing in late 2003, which has continued to the time of this writing in the summer of 2007. Venture capital activity at present remains far below that of 2000, but is nevertheless above 1998 levels.[19] After the bubble burst, the "wash-out" rate of VCs has been very high, and many of them with what were deemed the right credentials and touted for greatness are now doing something else.[20] What is not evident, however, is that the dot-com bust effected any fundamental change in how VCs go about their business, how they decide to invest in technological futures. True, the volume of

self-congratulatory internal commentary and external adulation abruptly declined after spring 2000, together with at least some of the "sex appeal" of the testosterone-charged VC way of life. Post-bubble, the substantial drying up of opportunities for VCs to cash out their investments in companies through initial public offerings (IPOs) meant that it became more expensive to commit funds to very early-stage enterprises. More and more, VCs looked to companies that were somewhat more mature and even to companies that had already generated revenue streams. As one spokesperson for the VC industry put it in 2006, "If venture capitalists are looking at two equally bright concepts—one is two guys and a dog sitting in a garage and the other is a working prototype—they're more likely to invest in the thing that's working."[21] Nevertheless, enthusiasm for investing in early-stage companies was reviving at the same time, with Web 2.0 and "green" energy deals leading the way.[22] By 2007, there were renewed concerns that VCs investing in these sorts of companies were again letting their hearts rule their heads, though commitments to homeland security and military technology firms were almost as large as to clean energy companies.[23] Some commentators even said that personal judgment was being at least partly replaced by rigid financial criteria: "After a period when 'epiphany replaced rigour,' the leading American venture firms are going back to basics."[24] A few VCs even shifted some or all of their attention to the less-uncertain M&A (mergers and acquisitions) field.

However, technological and market trends emerging in the last several years have gone some way to reverse the power dynamics in the entrepreneur-VC relationship and also to reintroduce a more welcoming attitude to high-risk investments. Web 2.0 participatory information-sharing ventures—e.g., MySpace, Facebook, YouTube, Flickr, Digg.com—are different from biotech in often having very low capital requirements and barriers to entry, while generating early revenue streams, meaning that VCs are sometimes queuing up to get barely postadolescent geeks to take their money.[25] The changing power relations involved in the rise of Web 2.0 enterprises is indexed by the "courtship" by Accel's famous VC Jim Breyer of Facebook founder Mark Zuckerberg. Breyer tried to buy the entrepreneur a drink at the Woodside Pub, but Zuckerberg was still not twenty-one: "I had a glass of pinot noir and he had a Sprite," Breyer said.[26] Once skeptical of repeating the mistakes of the 1990s, some VCs are now willingly embracing risk-reward ratios similar to those of the disavowed decade.[27] Moreover, the nature of VC investing means that the activity inevitably remains in the domain of very high

uncertainty. Michael Moritz, of Sequoia Capital, funded Google, saying that "it's all too easy to identify the things that might go wrong with an investment . . . It's far more difficult to identify what might be possible . . . Safer isn't better."[28] And the slowing down of the IPO market in 2005 and 2006 induced several, previously conservative, VC firms to take on much more "technology risk"—investing large sums in companies without proven technologies—than they once had.[29] It is correct to note that many—not all—VC firms became, so to speak, more conservative post-bubble, but it would not be correct to conclude that the 2000 bust had any qualitative effect on how they make their investment decisions. VCs aimed to reduce their exposure to risk, but there is only so much that they can do in risk-reduction if they wish to remain venture capitalists: if you want investment vehicles that are much lower in risk, then you will be competing with banks in public capital markets—and you will not be able to attract capital that is willing or able to pay your very high fees. Radical uncertainty is therefore a *defining feature* of the VC world. VCs can and do try to reduce these uncertainties: one Southern California VC, talking to me early in 2003 and making no reference to post-2000 changes, wanted it understood that he did *not* welcome risk or see himself as a gambler:

> Venture capitalists are not paid to take risks. [This is a] common misperception. We're paid to make money. The fact that we have to take some risks to do it is hard, but our investors don't say, "Go see how many risks you can take." In fact, I'm in the business of mitigating risk. If I have five deals, all of which are equally interesting, I want the one with the least risk, with the most complete management team, with the most protected technology.[30]

The cost of reducing uncertainties is reducing potential for reward, and VCs intending to make money by investing in start-up companies have to accept high uncertainty as a defining feature of the world in which they choose to live.

PERFORMING THE FUTURE IN THE PRESENT

There is a vast literature on how to be a successful entrepreneur and a smaller, but still large, literature on how to be a successful VC. Both genres prescribe how the crucial encounter between VC and entrepreneur ought to go—how the entrepreneur can get investment capital from the VC and how the VC can pick a winning investment. This sort of commentary—mainly how-to manuals and participants' reflections on how

they actually did it—is one sort of evidence used in this chapter, and there is also a considerable body of Silicon Valley- and Route 128-type high journalism, much of which is extraordinarily sensitive to the concerns about "people-mattering" that run through this book. But another source of evidence comes more directly. In the period from about 1999 to 2003, I spent time as an informal observer at a series of meetings in Southern California where early-stage high-tech and biotech entrepreneurs presented their "pitches" to a mixed audience of VCs, private "angel investors" (commonly "cashed-out" entrepreneurs investing their own money), intellectual property lawyers, accountants, potential business partners or licensors of the technology, and techies in related areas. And my understanding of *how* the future is predicted and made investable derives from reading, from talking with relevant participants, and, especially, from *watching* as people predicted technoscientific futures and others helped them do so. These are scenes in which interest is *performed*: entrepreneurs seek to *interest* investors in a particular vision of a technological future and investors look for the grounds on which they would allow themselves to get *interested* and, indeed, invested in that vision.[31]

What do such scenes and performances look like? How is a vision of the future performed in real time? The relevant scenes are a series of "Springboard" breakfast meetings, usually held at the Faculty Club of the University of California, San Diego, sponsored and hosted by CONNECT, a nonprofit, self-financing part of University Extension.[32] CONNECT was founded in 1985 and the Springboard program, designed to provide free assistance to start-up companies and entrepreneurs, has been going on since 1993. It is well regarded locally and nationally, having "graduated" about two hundred companies that had gone on to raise about half a billion dollars in capital by 2004, and has been widely imitated around the world.[33] There are typically twelve to sixteen people present—though one meeting in July 2002 drew about thirty—all invited by the CONNECT staff largely because they are thought to possess relevant expertise. There are almost always paper executive summaries of the business plan available to be picked up on entry, and participants leaf through this document while eating their muffins or bagels, occasionally referring to it during the presentation and subsequent commentary. (See figure 16.) What motivates these people to get up and on the freeways so early? Some have to get going well before 6 a.m., and this is not a scene in which many deals actually get done or money gets made. The professional term of art for the instrumental purpose of these meetings is "networking," though I've heard a lot of attendees say such noninstrumental things as "I

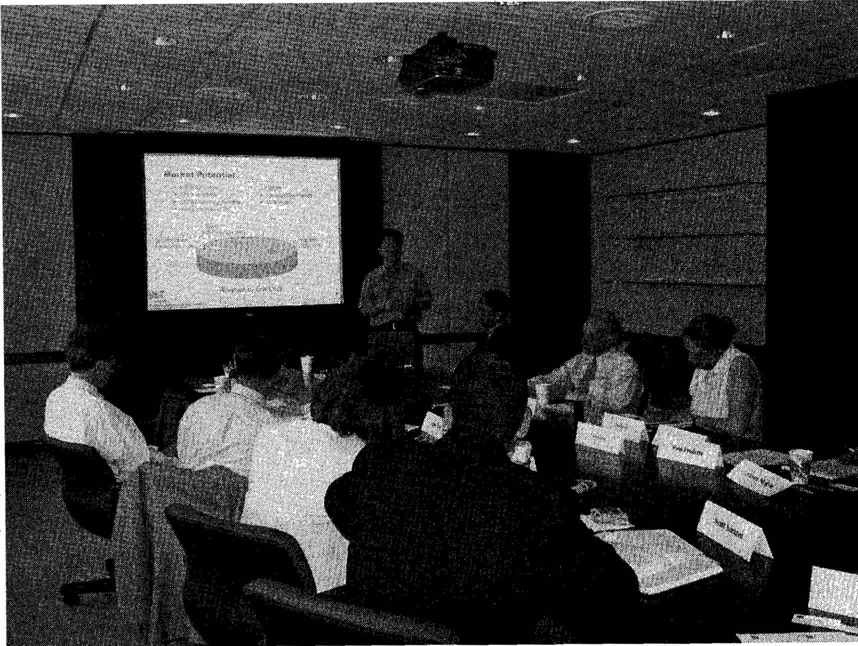

FIGURE 16. A meeting of the Platform program of the Massachusetts Technology Transfer Center (MTTC) in August 2007. MTTC is an organization within the University of Massachusetts President's Office in Boston, and the Platform is similar to UCSD CONNECT's Springboard program, both venues in which very early-stage entrepreneurs are coached and then "pitch" their company to an invited mixed audience of potential investors, service providers, and techies in similar lines of work. Here a postdoc electrical engineer at MIT is presenting an idea for a company based on a silicon chip designed to preconcentrate biomolecules. (Photograph reproduced by permission of the Massachusetts Technology Transfer Center.)

want to help" and "it's usually interesting" or "fun." If you're a sociologist, what motivational language you want to apply is another issue, and the epilogue to this book offers some brief remarks about how one might interpret the form of life known as networking.

The enterprises pitching at the Springboard meetings are usually very early-stage companies, some not actually incorporated yet, all a long way from going public.[34] They're something between a dream in an entrepreneur's eye and a small-scale incorporated reality. Some entrepreneurs have not yet given up their day jobs; others have. They've all got sweat equity, and now they need infusions of capital to hire some crucial employees and to secure premises and plant. At the stage they've typically reached, they might need up from $1.5 to $3 million to go on with. That's

typically a VC-sized capital infusion, while bands of angel investors—clubbed together for administrative convenience and sociability—tend to function in the quarter-million to one-and-a-half million dollar range and individual angels may put in as little as $15,000.[35] (VCs can be very rude about the sophistication of individual angels and angel bands: sometimes they like to say that "angels get killed"; sometimes they characterize angels among the category known as "the three Fs: friends, family, and fools.")[36] Some capital may have already come from second mortgages, some (literally) from friends and family, some—imprudently but not uncommonly—from credit card debt.[37] A company presenting at Springboard in June 2000, and founded in the previous year, had already secured a $500,000 capital infusion through the CEO's friendship with a then still-buoyant dot-com toy-selling firm. A few Springboard-presenting entrepreneurs may now be ready to pitch to VCs proper, possibly at one of the many venture fairs around the country, but many more hope to be in that position quite soon.

These Springboard sessions are an edgy hybrid between a *rehearsal* for a proper pitch to VCs or angel investors and the pitch itself. Presenters have been elaborately prepped by CONNECT staff about how to make an effective pitch—everything from pace and tone of voice, to the best use of PowerPoint visuals, to how to respond in the following Q&A period: "This is what you want to do if and when you make a pitch on Sand Hill Road." Many of them genuinely believe that *this* pitch will result in VC or angel investment, even though they're told that the chances are slim. Certainly, the entrepreneurs all take the pitch very seriously and *act* as if it's "the real thing." In fact, it's *not* unknown for deals to get done as a result of the present pitch, and this pitch, after fine tuning, is usually the one they go on to present to VCs, if indeed they get that far. The seriousness of the occasion is signaled by the fact that the entrepreneurs (if male) are almost always in suit and tie, while the audience is usually more casually dressed. No one is asked to sign an NDA here: the presumption is that everyone present is normally trustworthy—having been vouched for by staff—and that key trade secrets are, in any case, not going to be revealed. (At a similar meeting in Boston, the staff person in charge prefaced the session by cuing those present that "it's all proprietary here," and wound up by reminding them to "keep the information inside the room," but nothing was offered to be signed and the tone was a redundant counsel to use common sense.) It's understood in these circles that you've got to take these sorts of risks to get the expected benefits. Tom White of Celera Diagnostics, asked about the status and enforceability of confidentiality

agreements negotiated with academic collaborators, said, "It's always a calculated risk. You just have to make your own judgment, and you are careful as to the amount and degree of information that you provide, and you kind of assess how reliable the person is."[38] (Obliged by my former university's Human Research Protection Program to get signed informed consent forms from entrepreneurs I interviewed for material in the preceding chapter, some of them looked bemused at what they took to be these curious academic artifacts and tried to bat them away.)

As is the current norm, presentations are structured around PowerPoint slides, somewhere between ten to fifteen slides for a fifteen-minute pitch. Unlike academic talks, the entrepreneurs almost never seem to have the slightest problem keeping to their allotted time, partly owing to the extensive coaching available to them about how to do the thing properly.[39] (When, exceptionally, one entrepreneur took three minutes longer than intended, he was gently criticized and strongly advised not to do that again.) "Rehearse, rehearse, rehearse!" one entrepreneurs' workshop manual preaches.[40] "They practice you to death," said a grateful biotech entrepreneur about one of the CONNECT coaching programs I attended.[41] It's well understood that VCs haven't got a lot of time, that your pitch is likely to be one of dozens that they hear in the course of a year, and that you'd better be concise. VCs are said to display status by visibly letting their attention wander if presenters go on too long; accordingly, entrepreneurs are coached to observe the maxim "less is more."[42] Investors aren't usually scientists, and presenters are advised to simplify the science as far as possible, reserving displays of enthusiasm for the business opportunities. "Stay away from techno-speak," one guide cautioned: you can always talk to the geeks one-on-one later.[43] At one pitch, the presenter (a biology professor) clearly got too "technical" for the potential investors, and was explicitly recommended in future to "dumb it down": he was told that he had been "way too technical"; you have to bring the presentation down to audience level; the audience mustn't get lost in scientific detail "or they tune out."[44] (Investors will want to know at the outset whether scientific claims have been peer-reviewed and published in reputable journals, but they needn't be given a science lecture at this stage: all the "technical stuff" and the legal status of intellectual property can, and probably will, be checked out later.)[45] Matters covered follow a fairly standard format. In fact, if you've got PowerPoint on your computer and you click on the Business Plan option, you'll have the standard format already laid out for you, in twelve slides, with the bullet points all specified. All you have to do is fill in the details. (Or you can just go

to any number of on-line sites to see business plan specifications clearly outlined for the entrepreneur.)[46] What's the technology? What's its legal status? Who's the management and technical staff? What's the market? Who's the competition? What are the risks and rewards? How do you see revenues and profits developing over the next three to seven years? What's the present management team? What do you need now in the way of capital, staff, and related support?

Presentations and business plans that are manifestly sloppy, or that aren't done in due form, clearly don't count as good ideas, and, again, entrepreneurs are aware of, and many seek out, coaching assistance to enable them to do the job professionally.[47] "It's not what you say," a guidebook for entrepreneurs declares, "but *how you say it*—in your business plan and in your presentation." No one model is right for all purposes, the guidebook concedes, but there is an ABC of plan preparation: "Always Be Concise."[48] That much about the pitch is fairly rule governed, even ritualized, and sometimes VCs just ask you for your PowerPoint presentation, which they can review in the comfort of their offices before deciding whether to have you in personally for a one-on-one, or a meet-the-partners, session, lasting maybe an hour. (If you just turn your back on the audience and *read* your slides, a VC advises, "your audience will find you dispensable.")[49] Coaching manuals refer entrepreneurs to "the rule of seven" (or its several variants): no more than seven bullets per slide; no more than seven words per bullet; and they advise you how to stand (weight evenly balanced on both feet, no slouching); how to use your hands (avoiding such "wooden-speaker positions" as the "fig leaf," "the mortician," "the tight-rope walker," and "gunfighter" or "gorilla"); not to grab the podium ("the death grip"); to make sure you've emptied your pockets so that no one can hear your keys and coins rattling, how to move your eyes from person to person in the room ("three beats each, then move on—make eye-contact with everyone in the room"), but do not shift the gaze from right to left as if watching a ping-pong game.[50] Joshua Boger, the founder, president, and CEO of Vertex Pharmaceuticals, aimed for the illusion of "intimacy" in pitching to a roomful of potential investors, using a "variety of stage tricks to elicit such feigned intimacy—lowering his voice to make a point; speaking to the back row, which gave those in the forward rows the impression that he was speaking to them." His major device, Barry Werth records, "was a strenuously rehearsed spontaneity. As he spoke, Boger listened intently to his own words, then quickly anticipated the questions of those in the audience and tried to answer them matter-of-factly in the next sentence or two." As much as any

Renaissance courtier, Boger understood the art of artlessness: "You can't fake excitement and you can't fake sincerity," Boger noted with no evident intention of irony. "It can't be done . . . and to do it properly you have to practice."[51] Investors recurrently indicate that they're bored with presentations that are *too* smooth and *too* scripted. "Just tell me about it," they say. And a guide to biotech entrepreneurs advises against an overly "flashy presentation": "Too much glitz makes it look like you are masking a bad idea."[52]

INSTITUTIONALIZED SKEPTICISM AND ITS LIMITS

There are also some explicit criteria VCs are said to look for in deciding whether a specific investment is credible and attractive. There is paper involved and formal criteria have to be satisfied. Presentations, almost always, come together with a paper business plan, maybe thirty pages—with appendices pushing it up to perhaps one hundred—though the prefatory executive summary is usually no more than three pages and may be as short as a page and a half.[53] The business plan should look plausible and professional; it should not evidently contradict what potential investors competently know to be the facts of the matter; and it helps if it resembles, or can be made to resemble, past well-known success stories. Entrepreneurs are sometimes strongly cautioned not to deviate from industry norms in projecting sales and growth. It is reassuring if the present future can be made to resemble past futures. And there are some widely repeated folksy heuristics that VCs say they use in picking winners and that entrepreneurs are counseled to be aware of in pitching to VCs: among many examples, "look for companies selling aspirins rather than vitamins"; "there's no premium for complexity"; "set your sights higher than your sandbox"; "find markets the size of Texas"; "don't sell a dollar for 95 cents"; "don't invest in companies whose business you can't explain during an elevator ride" (the elevator pitch); "real entrepreneurs quit their day-jobs"; "don't let your mouth make a promise your ass can't keep".[54] The "Virtual CEO" and VC-broker Randy Komisar says that VCs want to know "three basic things": "Is it a big market? Can your product win over and defend a large share of that market? Can your team do the job?"[55] They want positive answers to all three, but they accept that every claim has, nevertheless, to be evaluated. And, in any case, the process called "due diligence" is designed, in principle, to allow investors to detect flies in the entrepreneurial ointment or misrepresentations of matters of fact.[56] In principle, what due diligence is intended to do is very hard to achieve: it's

hard to verify empirical claims about past and present states of affairs and much harder to evaluate the plausibility of projections about the future. Due diligence, as routinely practiced, is an attempt to check out, for example, the credentials, character, and track record of the entrepreneurs; the likely size of the market; the security of intellectual property; the plausibility of the science and technology, as attested by relevant experts; and the existence and plans of potential competitors. It tries to identify risks rather than rewards.[57]

Yet, even here, legends circulate in Silicon Valley about appallingly amateurish and incompetent presentations, decided on over breakfast at Buck's in Woodside, Hobee's or Il Fornaio in Palo Alto, or the Konditorei in Portola Valley and sealed with a handshake, deals that turned out to make everyone involved disgustingly rich.[58] (Coffee and the coffeehouses in Silicon Valley are at least as important in VC deal making as they were for commercial relations in seventeenth-century London. A journalist noted that "to pass a day in the home of the tech industry doing meetings is to sit through one long round of cappuccinos and lattes.")[59] Gordon Moore tells an iconic story about how he and Bob Noyce got several millions in 1968 to start Intel from the VC Arthur Rock, the deal getting done "within an afternoon" and "without a business plan."[60] Familiarity here trumped formalism: Rock and Noyce had by then known each other for eleven years and used to go hiking and camping together. "Bob just called me on the phone," Rock said: "We'd been friends for a long time . . . Documents? There was practically nothing . . . We put out a page-and-a-half little circular, but I'd raised the money even before people saw it."[61] When software engineer Pierre Omidyar, the founder of eBay—before Google, the most successful Internet company of all—approached Sand Hill Road VCs late in 1996, he didn't have a PowerPoint presentation or even a business plan, and when he borrowed a VC's laptop to show the firm the eBay Web site, the server had gone down.[62] Even after the 2000 bubble burst, and VCs' vows henceforth to do things in a more deliberate manner, the pattern is repeated: a participant in a meeting between Facebook's Mark Zuckerberg and Bay area VC Peter Thiel said that when the entrepreneur "started telling us the Facebook story . . . it was pretty quickly apparent that this business was taking on aspects of an eBay or a Google, something with just an extraordinary growth rate. About eight minutes into the talk, it was clear to me that Peter was going to invest."[63] The firm quickly committed $12.2 million to Facebook, prompting comments from some observers of the VC scene that no cautionary lessons had been learned from the excesses of the late 1990s.[64]

The San Diego biotech entrepreneur (turned VC) Ivor Royston celebrates the role of intuition over due diligence, citing the example of Tom Perkins, one of the VCs who backed his own start-up biotech company:

> Tom Perkins ... was a very intuitive person. It's not like he had to do extensive due diligence, you know. Once he got comfortable with the technology, intuitively, and it made sense, and he got comfortable with the people, he was willing, basically, to bet on that, to bet on you ... I admire that kind of thing. I think more and more people should, instead of doing extensive due diligence. Just trust their instincts, their gut, you know.[65]

"I don't see a correlation between due diligence and success," Royston concluded. It's something you have to do for institutional reasons, but Royston was skeptical of its informational role.[66] This was a sentiment strongly endorsed by the San Diego VC Tim Wollaeger, who was CFO at Hybritech in the 1980s. Wollaeger judged that "there is very little correlation between the amount of *Due Diligence* performed and the success of an investment," and went on to enumerate a series of successful investments he made within three days of hearing the initial proposal: "I do not believe a great deal of Due Diligence will save you from bad investments. It is better to get going on the companies that feel right to you."[67] And the *people* who feel similarly right. Royston again:

> Oh, you do have to trust the people—I mean—that are presenting to you, and ... we actually do significant reference checks on people, but, I mean, you know, when you meet somebody, ... you should be able to tell whether these are good people to be partners with. It's like getting married. How do you describe to somebody who you want to get married to? And that's the same thing ... You try to describe the characteristics of the person you want to marry, but, you know, falling in love and—it's the same—I can't tell you—I mean I have people sitting in front of me describing great science and interesting ideas, but I don't trust the guy, just from his—the way he talks, his mannerisms, how he talks to me. I've dismissed companies just because I don't like the guy.[68]

For these reasons, some VCs, when pressed about why some are successful in their investment choices and others—seemingly equally well-qualified—are not, despair of identifying publicly visible criteria: "I think what a lot of these guys [VC failures] learned, some the hard way, is that you're a natural athlete or you're not ... Some can do it, and some can't, and like with athletes there's no way of telling until they take the field."[69] Even some VCs setting greater store by the due diligence process freely

acknowledge its limitations: "I believe what due diligence does, it doesn't prevent you from making bad investments, it prevents you from making stupid investments, which are two different things. Stupid investments are the ones where you say, 'Boy if I just did a little checking I would have known that this guy was a flaming jerk.'"[70]

The forces of familiarity that operate so strongly in VCs' business worlds flow along some of the same channels as the rest of their lives. Work and play, so to speak, perhaps overlap more extensively than they do in the worlds of other professionals. Deals are done, or at least discussed, at restaurants and coffee shops (of course), on the golf course, on a sailing boat, on fishing trips to the Sierras, at baseball games. That's one way of thinking about why it's such a masculine world. Only 8% of the partner-level members of the National Venture Capital Association are women, and only a quarter of VC firms had women in management positions in 2000, but the female VCs who reflect on this state of affairs offer a wide range of complex and interesting explanations. The story most compatible with "discrimination" in VC firms draws an analogy between becoming a general partner and marriage. Carole Dressler, a headhunter for VC firms, says that "integrating a new partner is like marrying one person to six ... You're dealing with close-knit organizations that depend on lots of camaraderie, and when you're talking about a group of males making decisions, they often take on male partners," and, she might have added, invest in male-led start-ups. (Only 6.5% of the firms in which VCs invested in 2006 were founded by women, even though women are estimated to own almost 30% of American companies and are founding new companies at twice the rate of men.) Yet the dearth of female VCs is only slightly worse than in the techie world in which VCs invest: in 2006, only 11% of U.S. computer engineering graduates were women. And another female VC attributes the shortfall among VCs to women's lack of presence in the career pools from which VCs are fished—not so much MBAs (and especially not in the West Coast VC scene), but people with entrepreneurial technology backgrounds: "The main reason there aren't more women in venture capital," observes Mobius's VC Heidi Roizen, "is that there aren't more women in the positions that lead to careers in tech investing, like founding a tech company or becoming a CEO of one."[71] Yet three caveats need to be made. First, patterns of familiarity in the VC-entrepreneur world are *not* solely those that operate to the detriment of either women, or, indeed, of minority groups. Although mountain biking and baseball might plausibly be regarded as typical sites of male bonding, other important informal channels include membership

on the boards of voluntary associations and educational institutions, and, not uncommonly on the West Coast, churches—and these are not notably male domains. Second, while it is reasonable to think that male VCs are more comfortable forming business relationships with male partners and entrepreneurs, one might also expect discomfort across racial, religious, and ethnic boundaries, and yet this is an ethnically cosmopolitan world in which Indian, Korean, Israeli, Turkish, and Russian VCs and entrepreneurs flourish together. Finally, such solid evidence as there is of structural disadvantage flowing from patterns of familiarity is *not* incompatible with a shared *psychological* experience of extreme meritocracy. It is just very hard—though not totally unknown—in this world to hear talk of group discrimination. It is not part (or at most it is a very minor part) of members' vernacular—as it *is* for, say, members of academic sociology or history departments. Almost everybody in this world insists that "all cats are gray in the dark"—that good technology, good management, and good judgment of technology and management are all that matter. Women VCs have been notably voluble in rejecting the notion that they are discriminated against because they are women: VC Peg Wyant, for example, is well aware of the present state of affairs, and wishes it were otherwise, but is optimistic that "all of the components are in place for this to be a nonissue by the end of the decade."[72] And women VCs insist as vigorously as their male partners that their investment decisions are gender- and ethnicity-blind.[73] Gender and ethnicity are, indeed, elements in the patterns of familiarity that structure relations in the world inhabited by VCs and entrepreneurs, but they do not map unproblematically onto psychological states; they are not the only elements in such patterns; and they are cross-cut by considerations that work in ways whose effect on members of specific groups is impossible to determine.

Patterns of familiarity powerfully regulate access to VCs' attention. It is one thing to prepare a business plan or presentation in due form that testifies to inherently interesting technologies and opportunities; it is another to get the plan even looked at by a VC.[74] Jim Breyer of the elite VC firm Accel Partners says his firm gets 10,000 pitches a year, of which only several hundred get "seriously considered" and maybe twelve to fifteen invested in.[75] According to one overall estimate, as few as 25 of 1,000 submitted business plans ever result in a face-to-face meeting, but that face-time is vital since "once your idea has a face on it, you're already ahead of the other piles of paper."[76] A VC interviewed by Harvard Business School professors told them that "we got 300 approaches last year, 150 of those in writing; we met with about 15, then about 10 for a second meeting, and of those we did [a deal with] one or two."[77] It is a commonplace in the VC world that plans coming in over the transom (these days, as e-mail attachments) *never* get to the general partners' desks, and, in the rare cases that they do, they have to survive ruthless selection typically entrusted to lower-level administrative staff. One Sequoia Capital VC said he took home thirty business plans a night, but these already had gone through subordinates' triage.[78] The accountancy and consultancy firm PricewaterhouseCooper estimates that only 5% of all business plans received by VC firms are read—by anyone—beyond the executive summary.[79] A Southern California VC told me that he had almost never in his career looked at a business plan that came over the transom: "The unsolicited business plans; the stuff that comes over e-mail, 90% of it gets stopped by my office manager."[80] Another said that he did sometimes look at unsolicited plans, but had found that it was scarcely worth his while: "I have never invested in a single over-the-transom idea for the simple reason that none of them has met my investment standards . . . You're introduced by somebody you know, maybe somebody you trust, as opposed to somebody you don't know, who you don't trust."[81] PricewaterhouseCoopers similarly warns entrepreneurs not to cold-call VCs: "Introductions to venture capitalists through referral sources they respect improves the odds of securing financing," and the firm notes that it "can provide these introductions."[82]

A rule of thumb in this world mobilizes a vernacular version of social psychologist Stanley Milgram's work on the "small-world phenomenon"—the finding that two randomly selected people in the United States could be connected with each other through fewer than six intermediaries on average.[83] Entrepreneurs thinking of approaching a VC or angel investor are sometimes counseled to have in hand a social map connecting them with the investor through no more than "two degrees of separation"—someone who knows the entrepreneur who knows someone who the investor knows.[84] At a Springboard presentation in August 2000, one of the CONNECT staff cautioned the techie founders of a wireless mapping technology start-up to get themselves better networked: "Raising money is a contact sport. You want to know people who know people." Contacting a venture capitalist "cold"—without a prior introduction or shared node of familiarity—is sometimes seen in itself as a consequential mark of naivete: "Anyone whom I don't know who approaches me directly with a business plan shows me they haven't passed Entrepreneurship 101."[85] A handbook for entrepreneurs similarly cautions that "business plans that get financed are rarely those that just come in over the transom. 'It's not what you know, but who you know,' rings very true

in the venture capital industry."[86] Robert Kunze adds that "viable business plans come to me almost entirely from referrals," from people he's familiar with who know the VC business: "This networking process is itself an informal investment screen."[87] "It is usually the quality of the references that determines whether a proposal becomes a deal," one commentator observed.[88] In 1978, Ivor Royston got an appointment with the VC Brook Byers without a business plan at all—a six-page business plan came later, at Byers's request. Royston got into Byers's office because Royston's wife, Colette, had once dated the VC, leading Hybritech's first president later to remark: "Now this is the way great companies get started. It's who you've dated, you know."[89] Another entrepreneur got into the presence of a Kleiner Perkins general partner because a member of his management team had many years previously dated the VC's sister.[90] Sometimes VCs feel themselves obliged to meet with an entrepreneur to whom they would not otherwise give time just because of what is owing to the introducer. So if a tech transfer officer at a respected institution asked for the favor—"'Look, I want you to really meet with one of my scientists. I think he's got something interesting'"—Ivor Royston said that he would feel obliged to grant a meeting: "We sometimes do it as a courtesy, you know, just to be politically correct."[91] Almost without exception, business plans need to come *introduced*—hand-carried, as it were, by VCs or entrepreneurs or institutional representatives with whom the prospective source of capital is already familiar. Familiarity with the personal characteristics of others, and with their known integrity and capacities of judgment, is what opens doors in this world. Without the advantages of familiarity, the satisfaction of formal criteria means almost nothing.

When you venture into the unknown you need all the familiarity you can get. The VC world is one in which the biggest prizes famously come from "out-of-the-box" thinking, from the totally unpredictable: not, as VCs say, "Faster, Better, Cheaper" but "Brave New World." There's a fine line, VCs remind themselves, between the high-tech bizarre and the brilliant, so you can't be certain that pitches (and the entrepreneurs that make them) that sound and look crazy really *are* crazy. One otherwise cynical VC records that he was not necessarily put off by entrepreneurs who said they were inspired by God or who wanted to make megabucks to give away to the Maharishi: "Anything legal that would motivate [him] to work 80 hours a week was fine with me... Anyone wanting to start up a semiconductor company in 1983 had to be a little nuts—along with the venture capitalist who backed them."[92] A Silicon Valley VC observed that "the best deals are always the craziest," and his colleague agreed that "if you want to go where the big wins are, be a little bit crazy... Conventional wisdom leads to conventional returns. If you're afraid of being fantastically wrong, you'll never be fantastically right."[93] (I am personally familiar with the CEO of a small drug discovery company who was vigorously cautioned against telling potential investors that Jesus helped write his business plan, but who nevertheless persisted in evangelizing potential investors as well as employees. That company, with its theologically unreconstructed CEO, recently raised $40 million in additional VC finance.)[94] Plausibility is not understood to be a very reliable guide to picking "the new new thing." VCs love to quote the alleged 1977 dictum of the founder of Digital Equipment Corporation that "there is no reason for any individual to have a computer in their home."[95]

FAMILIAR PEOPLE AND UNFAMILIAR FUTURES

At the California breakfast meetings that I attended, it's often pretty evident what is a polished presentation and what isn't, and polish is a goal in its own right, even if slick professionalism is no guarantee that you will attract angel or venture capital. So potential investors are looking at bits of paper and PowerPoint slides and seeing whether what's on them satisfies certain criteria, criteria that investors can and do articulate and write down—though it's remarkable the limited extent to which such criteria actually feature in VCs' commentary on their work. But they are also, and VCs are reflectively well aware of this, looking at a *performance* that's right in front of them. They're looking at *someone performing* a credible technological and commercial future. And VCs do have quite a lot to say about such things.

There's a proverb in VC circles—they're great ones for proverbs—that advises you to "bet on the jockey, not on the horse."[96] This proverb, like all proverbs in naturally occurring settings, has, of course, a ceteris paribus clause: you shouldn't bet on entrepreneurs just because they seem innovative, prudent, and professional; nevertheless, given that other features of the proposition are plausible, the decisive factor, sometimes more important than the promise of the technology or of the market, is individual and collective *management*, and this is particularly pertinent in early-stage investing when uncertainties are at their greatest. They're the people who are going to make it happen, and, if the entrepreneurs look good, then that's very important indeed. "More than anything else," an entrepreneur's guide says, "venture capitalists are judges of people."[97] So, as the late Harvard Business School guru General Georges Doriot said in a

widely quoted remark, go for "an A-quality man with a B-quality project, but not the other way round."[98] And that's the thought informing Arthur Rock's claim that Intel was the only company he ever invested in that he "was absolutely, 100 percent sure would be a success, because of [Gordon] Moore and [Bob] Noyce." He had known them personally for such a long time, and he trusted them. "The lesson from Intel?" Rock rhetorically asks himself: "The necessity of having great management."[99] "I believe so strongly in people," Rock said, "that I think talking to the individual is much more important than finding out too much about what they want to do."[100]

That's one interpretation of what it means in VC circles to bet on the jockey. But betting on the jockey has got even greater scope, consequence, and interest for understanding how late-modern technoscientific futures are made credible and therefore *made*. Consider the scene in which the pitch is made: projections of the market and of revenues; projections of how the technology will be developed and manufactured; and projections about how likely competitors will appear and be dealt with—all these, however plausible, take the form of bits of paper or electronic bytes. In futures as radically unpredictable as these, anything may happen—and, as they say, usually does—to deflate the value of these bits and bytes. The so-called safe harbor statement required by the Securities and Exchange Commission since the Private Securities Litigation Reform Act of 1995, for example, absolutely *requires* entrepreneurs to use deflationary boilerplate language in approaching investors, language that so severely qualifies the truth of technical and commercial claims that these mandated disclaimers are much more skeptical than anything that could be said by an external critic. In effect, safe harbor legal/linguistic conventions formally tell you that you're not to take entrepreneurs' forward-looking statements as worth much more than the paper they're written on.[101] VCs are highly skilled at discounting the supposed facts, claims, and future projections in entrepreneurs' business plans. One VC's cynical rumination on the subject was titled "Lies, Damn Lies, and Marketing Lies." Entrepreneurs' Lie Number 10, for example: "We are the new paradigm!" VC: "Whatever the hell that means. If I had a dime for every company that has told me it was the new paradigm, I would be rich enough to pay Bill Gates's legal bill."[102]

There is, however, something in these scenes that is more durable than the bits and bytes, something on which you can plausibly rely: the entrepreneur in front of you, pitching these claims to investors—if he doesn't go under a proverbial bus or have a radical personality

change—*will be there in the investable future*. What you see is very likely what you will get. If he seems innovative, prudent, and professional today, he will very likely be so a year or three in the future.[103] That's what's called a safe bet, or as safe as you get in this business.[104] And so it's also a safe bet that if problems arise with the business plan—and they always do—the entrepreneur in front of you now is the one who's going to fix those problems, insofar as they are fixable. Jockeys live longer than horses, and they're the ones that have got to steer the horse, to correct the errors of its ways, and to make adaptations to course conditions and the behavior of rival horses. One mark of an investable "great team" is, of course, a proven record of success, but so is past evidence of learning from failure. VCs are said to "attach a lot of importance to what they term 'scar tissue'—evidence that the person has learned from experience," a capacity to learn that can be projected into the uncertain future.[105] Greylock's Henry McCance glossed General Doriot's maxim about "A teams" and "B products" by noting some consequences of the extremely rapid rate of change in both technology and market opportunities: "Often what you invest in may evolve to something quite different over the length of a relationship. So if you have an A team, they will be able to internalize the changes, make the strategic calls that are necessary, and adapt to the changing environment that they're forced to live in."[106] Or, as the entrepreneur-turned-VC Ivor Royston says

> The idea is that if you invest in the right people and the technology doesn't work, then the people will find new technology, whereas if you have good technology and the wrong people, the technology can really flounder . . . So, yeah, you invest in people over technology.[107]

PRUDENCE AND PASSION

So what do you look for in a jockey? One thing might be a certain disengaged, cool, calculating, and wholly instrumental rationality. VCs are, after all, capitalists, and one thing that everybody knows about capitalism is that it's the bottom line, and only the bottom line, that matters. VCs worry that high-tech entrepreneurs sometimes don't know how to let go. Inevitably, VC investment means a dilution of the founders' share of equity and, almost certainly, of corporate control: in exchange for their infusion of capital, VC firms typically take preferred stock equity in the company or various combinations of equity and debt instruments. That's

to say, they wind up owning the "founders' company"—at least temporarily. In addition, the VC firm will normally place some of their people on the company's board and will help search out management expertise (including CEOs, CFOs, and COOs), additional directors, and members of a scientific advisory board (SAB). The founders get the resources essential for their company to succeed, but it's now "their company" only in a historic or moral sense. That's why VCs sometimes want the entrepreneur to specify an "exit strategy," or to look forward to a "liquidity event," a few years down the line—just so they fully realize that what's their baby now won't, in all probability, be their baby for very long. Should a company go public—the dream of all VCs—the average entrepreneur winds up owning 3 to 10% of "their" company, and very likely will be eased out of any effective control.[108] VCs want entrepreneurs to appreciate the cliché that "it's better to have a small piece of a big pie than a big piece of a small pie, or no piece at all."[109] As an angel investor put it, one thing you're looking for in an entrepreneur who is the CEO of a start-up is a willingness to let go if it's deemed necessary: "Will the individual get out of the way when others perceive that he has not adjusted to the changing needs of the business?"[110] The CEO of a fax modem start-up company relates how he was bluntly told by a VC within hours of his pitch that "I don't fund companies with CEOs who need to learn on the job."[111] Of course, the reward for dilution, and for letting go, should be great piles of cash, and VCs want to be reassured that entrepreneurs understand the deal—that "cashing out" is what they're about. VCs tell stories about the disastrous consequences that have followed from entrepreneurs who refused to let the baby go. Especially after the dot-com crash, some investors say that they're looking more carefully for the personality type called "the serial entrepreneur," someone who makes manifest a commitment to cashing out and going on to build another company, the mythic paradigm of which is Jim Clark of Silicon Graphics, Netscape, and Healtheon (now WebMD).[112] And sometimes they say that they make this personality assessment "within seconds of shaking your hand."[113]

But cool rationality is not the only quality VCs look for in high-tech entrepreneurs. Indeed, very often they look for character traits pointing in the opposite direction entirely. VCs say that they're looking for entrepreneurs who display *passion, commitment, and vision*. Read the reflections of VCs, and these words, or their synonyms, stare out at you on practically every page. The words are designators for the personal virtues VCs are looking for in entrepreneurs. VCs want to see passion, vision, and commitment in entrepreneurs because building a high-tech company is

a highly uncertain business: it's frustrating, it's emotionally draining, and it demands heroically hard work—24/7s for months and even years. You should, of course, have "Plan B," but there's a distinction between strategy and tactics. An investment analyst evaluating the COO of a Seattle biotech company described him as "smooth and competent . . . but does he have the stomach for the long haul?"[114] "Only passion will get you through the tough times," Randy Komisar told an entrepreneur whom he suspected of lacking passion.[115] Entrepreneurs understand that realizing their vision will probably demand the sacrifice of all other forms of personal fulfillment: no social life, no outside interests, a subsistence regime of Diet Pepsi and cold pizza.[116] Entrepreneurs (and the VCs who back them) are nature's optimists. Several months post-bubble, I attended a panel on "failure," also run by the staff of CONNECT. Scarcely a single "failed" entrepreneur presenting at this program neglected to quote the dictum that "what doesn't kill me makes me strong." They all had either dusted themselves off and started over again or were keenly looking forward to doing so soon. (Some VCs also responded to the bubble burst with optimism: the first and last PowerPoint slides in a 2002 presentation by the San Diego VC Bill Stensrud featured an explicit gesture to Nietzsche's version of the dictum—"What does not destroy me makes me stronger"—announcing that the most fertile conditions always followed a forest fire. "The smoke has cleared—we now know the rules; Small furry mammals will win."[117] The VC Ivor Royston told me in spring 2003 that this was "a good time to be a buyer. This is the best time to be doing venture capital now because the market's down."[118]

But even these optimists know the strong probability that all this sacrifice is likely to result in failure and that many failures will inevitably precede any success. That's one reason why VCs and angels like to see entrepreneurs' "skin in the game": they want the founders to put their own money in the business, as a mark of genuine commitment and seriousness of purpose.[119] And VCs may want entrepreneurs, especially academics, to *illustrate* commitment by showing that they really do *want* equity and financial returns. As one VC put it, "we would be leery if someone came in and—if a professor at the university came in and said, 'Oh, I don't want any stock.' To us, no stock means no commitment . . . No commitment to the company, even though the stock could be his ticket to, you know, financial success. We've actually had professors say, 'I don't want any stock because it's going to cause conflicts at the university,' what have you. But we wouldn't fund those people. Number 1, it suggests to us that they really want this company to support their research at the university . . . and

they're not really committed. The commitment means having stock in the company, even if you're a professor." At the same time, signs that an entrepreneur might want to cash out too early are taken as warnings: "We are looking for people that are really entrepreneurial, who are willing to really put in the time and sweat to see the company's success. And we're looking for real commitment to the company, absolutely. Any sign that they're just going to cash out early, we would walk."[120]

Perhaps harder for some outside observers to credit, VCs and angel investors often say that good-bet entrepreneurs should not be, and often are not, motivated by the money, or even by "success," save as a stage in the drive for further "success."[121] Money *follows* from a passionate commitment to change the world (plus, of course, good technology and a good business model), and money is a socially useful *index* that one has in fact succeeded. During the 1990s glory days of Silicon Valley, monetary success was so ubiquitous that it lost its "nuancing" capacity; as Po Bronson says, it "didn't impress": "The way to stand out is to make something that has a big impact on the course of technology." "Find a way to make a difference," one VC observes, "and the rest will follow—personal success, promotions, financial gain."[122] According to one commentator, what impressed Benchmark Capital's Bob Kagle about eBay's Pierre Omidyar was that the entrepreneur "was consumed by the idea of community—every other sentence, he spoke about the eBay *community*, learning from the *community*, protecting the *community*. It was a passion similar to what, in Bob-speak, Kagle had for deals that brought out *the humanity*; that's what Kagle liked most of all, *the humanity*. The more Omidyar talked about his community vision, the more Kagle, as he put it, was 'lovin' him—this guy is *good people*.' And Omidyar felt the same about Kagle."[123] Years later, Omidyar has become a VC himself, his Omidyar Network announcing its commitment "to fostering individual self-empowerment on a global scale," funding both for-profits and nonprofits—including Third World microfinance institutions—that promote "equal access to information, resources and tools, the ability to connect to others with shared interests, and a sense of ownership over outcomes."[124] Another VC notes that the high-tech entrepreneurs his firm backed "were driven, not to make money, but to make their technology the best in the world . . . The entrepreneurs who came in here and said they were motivated to start a company because they wanted to get rich were not the ones that had the best ideas. The ones who came in and said that they had an idea to make the world better or the technology better were the ones you wanted to back. The money followed the ideas."[125] Or, as Komisar says he tells the MBA classes he occasionally teaches, "it's the romance, not the finance that makes business worth pursuing."[126]

Robert Teitelman notes how early Silicon Valley entrepreneurs "carried the aggressive idealism of the 1960s into the new calling of business": utopian, commune-founding hippies and electronic or biotech visionaries—many of them were, after all, *the same people*.[127] Make no mistake about it: money is *very* important in this world. But VCs recurrently express wariness of the *sufficiency* of money motivation—both for themselves and for entrepreneurs.[128] And public displays of the personal virtues of passion, commitment, and vision are looked for as signs that entrepreneurs have a chance at success. Asked about the role of money motivation among entrepreneurs, a VC responded: "The guy who wants to do it for money? He's going to bail on you when the going gets tough and everyone's going to have tough going. These things are built by people who have a passion. You need people who want to change the world. Very few people [have it], you don't want guys who go, 'I'm doing this because I'm going to make a bunch of money.' That's a by-product."[129] Again, VCs occasionally think about themselves in the same terms. Brook Byers of Kleiner Perkins had no problem admitting that he got "paid and compensated well," but insisted that the true reward of his job was "to see the future. I get to see the future."[130] There is no reason to worry about the superficial soft-headedness: the vocabulary of virtue does indeed map onto that of monetary reward. Indeed, post-2000, some VCs have developed a special-purpose reactive public rhetoric: investments that some observers might ascribe to altruistic motives are carefully justified by bottom-line considerations. This is notably the case with the accelerating current funding of alternative (or "green") energy start-ups, and one Palo Alto VC's PowerPoint show invariably ends with a slide stressing "that to the extent his motivations are tinged green, it has to do with the color of money."[131] VC firms are not charities, and nothing they might say about "passion," "vision," and "changing the world" should be understood as an expectation that they, or the entrepreneurs in whom they invest, ought to lose money or have an insouciant disregard for capital growth and profit. The point at issue is how motives are parsed, stipulated, understood, and acted upon in the relevant communities.

Would-be high-tech entrepreneurs sometimes are told, and come to believe, that VCs respond to embodied displays of passion. Scientist-entrepreneurs, for example, are advised that they must "move away from the emotionally neutral language of research journals, opting for the language of desire used in marketing and business development circles." You

should "use the active voice whenever possible, expressing your plans in strong, visionary language."[132] Coaching manuals advising how to perform an effective pitch remind entrepreneurs that the credibility of an uncertain future resides in the performer's *body* and its use to communicate pertinent emotions: "You are the personification of your business plan—you bring it to life." You should "let your energy be expressed through your hands"; you should use gestures to "communicate excitement"; you should actually "be excited—let your nervousness show as excitement." Remember that "your audience will only be as excited as you are!"[133] There is, as one VC acknowledged, "a large 'show biz' component to a financing presentation," and there are also risks to appearing overexcited: "Trivial perceptions can turn off a potential investor. For example, one investor turned down one of my companies, I later learned, because the presenter's facial flush was taken as proof the man was an alcoholic," when he was in truth suffering from an allergy.[134] And while assessing entrepreneurs' virtues and capacities from their presentational abilities is a radically imperfect gauge, it is nevertheless recognized as essential. As General Doriot said, "We have to judge a man and an idea," but it's the person who stands in front of you who speaks for the idea and the credibility of its future. In Erving Goffman's terms of art, "impressions" might be what's in your business plan, but VCs are also looking for "impressions given off."[135]

This is what VCs, and allied sorts of investors, say they do. It's also possible, in a limited way, to *see* the process in action. At one of the Springboard meetings I attended in August 2000, a clinical psychiatrist at the university medical school presented his plan for a genomics company. His company would identify the genes for a number of clinically recognized conditions—notably bipolar disorder—with a view to producing psychotropic drugs targeted on those genes. The presentation went well, and all the usual amazing visions of the future were sketched: references were made to a genomic "landrush" and analogies were offered between the yet-to-be-incorporated start-up and both Genset and Millennium, the former attracting $100 million in investment from Johnson & Johnson. Then, rather out of the blue, the psychiatrist volunteers to his tough-minded audience a story about what "really" motivates him: "This comes from the heart," he says. "I *see* these folk," meaning the mentally ill. "I see them suffer. That's very important to me." There's an audible murmur of approval; the room comes alive. Encouraged, the psychiatrist reminds the audience that we all know someone who's suffering, someone that his company could help. An angel investor seconds the sentiment: "You're a *psychiatrist*. That's key. That's profound. Be who you are. I found this a very *honest* presentation—which I think is key." Conversely, six weeks later a presentation for an automated optical screening start-up didn't go quite so well. Audience members not-so-gently criticized the entrepreneur for revenue projections that seemed too modest for the claimed technological potential. The CEO-founder was projecting only $3.5 million in sales three to four years into the future and gaining only 10% of the market for such instruments. That's "too long for too little," an angel investor and techie interjected. A VC noted that "nine out of ten times we take the numbers [projections of revenues and market share] down. But here—if this is as compelling as you say it is—if it's 'breakthrough technology'—why are your projections [so modest]" and why do you not project greater enthusiasm? "Don't fall back. Don't be so agreeable. If you really believe [that your automated screening technology] will replace the human eye and skilled pathologist, then *say so*." To which criticism, the entrepreneur lamely responded: "I underpromise"; he wanted to be "more modest" than is the norm in biotech, where great and global things are promised and rarely delivered. But still the investors pushed him to *perform* a more compelling future: "You're not going to attract VCs"; "I don't think you can sell us what *you* don't believe in . . . Be bold and be sincere." At a 2007 Boston Platform meeting, the academic electrical engineer pitching a silicon chip designed to preconcentrate biomolecules was mildly taken to task for not connecting the technology to "real-life examples," such as those involved in cancer treatment: "Get the Wow-factor in!"; "Link this to real patient needs." Performed passion and integrity visibly and audibly index future profit.[136]

If some VCs say they are looking for these virtues in entrepreneurs, some also ascribe the same virtues to themselves, saying that *they* want to change the world, and make it a better place, and that money is only an index of their success in doing so. They're not cold-blooded killers; they're as passionate, committed, and visionary as any entrepreneur. One Southern California VC firm summarizes its investment process as "Passionate Commitment—Rational Decisions."[137] The VC Tommy Davis described his feelings about investing in a potentially world-changing company like Genentech: "We hug each other and dance around. I don't know if we're going to make any money out of this, but if it works we'll have done a wonderful thing . . . [It's] so exciting I can hardly stand it."[138] Of course, there are different portrayals of VCs circulating in and around their world and different stories about how they come to make their judgments. Entrepreneurs—and especially the hordes of the disappointed and the resentful—sometimes say that VC stands for "vulture capitalist," and

another name for them is "company nappers."[139] It is said that they take over founders' companies, not because they think that entrepreneurs really need management expertise but because they are control freaks. It is also said—and particularly in biotech—that VCs pigheadedly misunderstand the research process and set short-term "milestones" that distort scientific inquiry and hamper its ability ultimately to deliver the goods.[140] One Internet entrepreneur who got VC backing for his firm, and was then pushed out, put it this way: "Think about this: It's your idea, you write the business plan, you don't sleep for months, you talk all these people into joining you. [Then] all of a sudden, you get fired and they take your fucking stock away. It was like losing your kid."[141]

And then it is sometimes said that VCs' self-burnished image as charismatic and visionary judges of "the new new thing" is largely hype: for the most part, VCs are really just lemmings, playing follow-the-leader. They look around for deals that are attracting interest from star players and then try to hitch their carriage to a train that is already gathering speed. Many investments are syndicated—involving two or more VC firms—and, once a star "lead investor" takes a position, lesser VC firms all try to pile in. Then they take unjustified credit for judgments that were never theirs at all. One Southern California VC I spoke with has no problems whatsoever in acknowledging the importance of syndication and in certain aspects of the follow-the-leader syndrome:

> Absolutely, there's a lot of follow-the-leader, and syndication does have an aspect of having someone help you make the decision. Some of that is very rational . . . I don't know everything. I'm going to get someone else's opinion of it. And if saying, "everyone else thinks it's a bad idea therefore I'm going to say it's a good idea anyway and go forward"—occasionally that's a stroke of brilliance and insight but a lot of times it's just bullheaded stupidity . . . And syndication serves another function besides the decision making, which is the ongoing workload. So I think a lot of firms learn that doing it all by themselves, there's a lot of downside to it and it's not just that you might get [burned] . . . I think what bothers entrepreneurs is when someone [a VC] says I'm this bold, heroic person, when in fact they're not.[142]

Another VC conceded that many of his colleagues tried to mitigate risk by surrendering individual judgment, but maintained that these people were unworthy of their titles, and, indeed, his firm always *insisted* on being the lead investor in any deal. Clearly, the tactics of both VC firms and individual VCs vary enormously, and, equally clearly, entrepreneurs'

charge of lemming-like behavior does pick out a substantial feature of that world. Yet, insofar as the charge sticks, the responsibility of making individual judgments about the future is never eliminated; it is just shifted from one part of the investment community to another. And the same applies to the grounds of individual decision making. If not *every* VC manages uncertainty through the resources of familiarity and the search for entrepreneurs' moral makeup, then the VC process itself manifestly does.

The VC world *is* hardheaded; it is often ruthless; and it is governed by bottom-line considerations. But none of these characterizations should be seen in necessary tension with the role of familiarity and assessments of personal virtue in the decision-making process. Consider, for example, the time frame in which VCs operate. From the point of view of much academic science, that time frame may seem unwarrantedly short, but from the point of view of other investment practices it is quite long. As one Bay Area VC put it, "In venture capital, only about 10 percent is making the investment. The other 90 percent is living with it."[143] VC investing is often about building relationships with entrepreneurs that may last up to ten years.[144] When VCs take management positions with the companies in which they invest—if not directly, then by proxy—they may be in personal contact with the management on a regular basis, and that is one reason why it has been an adage about VCs that they would never invest in companies more than a day's travel from their offices.[145] "It's very time consuming," one VC told me: "It's not a passive investment." The relationship between VCs and the entrepreneurs in whom they have invested can take many forms, and it is often both practically and morally fraught, but the instrumental importance of building and managing that relationship is universally acknowledged. The same VC recognized the naturalness of an affective relationship with funded entrepreneurs: "[It is] a long-term relationship . . . and I think [we] do become friends. [We] might go on trips together, might do fishing trips or things like that."[146] Another VC, equally attuned to the affective texture of the VC-entrepreneur association, was conscious of both positive and negative implications. On the plus side, familiarity was a powerful voucher of virtues and capacities that would otherwise call for extensive background checks and the satisfaction of formal criteria: "I just hired a guy at one of my companies and I know a limited amount about his technical skills, but I've known him personally for thirty years. I have no question about his honesty, his character, his open-mindedness, and all of that. You know? And I didn't make a single breakfast call." On the other

hand, this *is* fundamentally a business relationship and there are risks to getting too close: "You're friendly but they're not necessarily truly close friends because at the end of the day they are people you work with. And it's hard. I fired two people who either before or during the process became friends, and it's hard. But do you [become friends]? Sure. I've got [friendly] with one of my former CEOs, her daughter, and so when she started up a new company I said, 'I'm not going on the board. I can't do it. We are too close. I cannot be objective about that.'"[147] And, apart from more personal considerations, there are several reasons why the fragile relationship between VCs and entrepreneurs might nevertheless take place on an affective field. First, though VCs do sometimes invest in what might be called "ordinary" businesses—restaurant and clothing chains, casinos, theme parks, and the like—the VC industry has come to be largely defined by the backing of high-tech and biotech enterprises. This means that relations between VCs and entrepreneurs commonly are between "status-equals"—both socially and educationally, though whether a Stanford Ph.D. in computer science or molecular biology outranks a Harvard MBA is moot. Second, VCs and high-tech entrepreneurs often recognize each other's aspirations and prized virtues: both—to use C. P. Snow's phrase again—consider themselves as having "the future in their bones," and, of course, in some instances VCs (like many angel investors) are themselves cashed-out entrepreneurs.[148] They regard themselves as elites driving the world forward, and VCs often derive their sense of self-esteem from the necessity of their role in transforming entrepreneurs' ideas into concrete realities. While VCs may look down their noses at entrepreneurs' lack of business acumen or management skills, their admiration for the scientists and engineers in whom they invest is often acknowledged and articulated. VCs consider investable entrepreneurs as serious people and they like to consider themselves as partners in serious enterprises.

Yet, whether or not the outcome of the VC-entrepreneur relationship is acknowledged as affective, there is more agreement on the significance of affect in deciding whether that relationship is going to happen at all. So VC John Fisher of Draper Fisher Jurvetson went so far as to say, "I don't care how good the concept is or the market is, if I don't like the guy I don't want to do the deal. Life is too short."[149] Expressions of that sentiment are, if not universal, at least common in the private investment world. "I must like the founders," said one angel investor, sharing his accumulated folksy wisdom; dealing with "good people" was his first

rule for success.[150] Most importantly, the resources of personal familiarity are acknowledged as a powerful source of relevant *information*, and, again, among the most durable types of information that can be had in a world of such radical uncertainties. Face-time, as it's called, is rich in information about the individual with whom one is dealing—information about motivations, capacities, and constitutions. It is what's called "high-bandwidth" interaction: the face-to-face domain offering, as one business school commentator put it, "unusual capacity for interruption, repair, feedback and learning," and in predicting the unpredictable, you need all the help you can get.[151] One Silicon Valley VC, when asked by a *New York Times* journalist why videoconferencing couldn't take the place of face-to-face meetings, "scoffed at the suggestion of virtual meetings as a feasible medium of establishing trust. He said that if the matter were important—and human beings were involved—he believed that there would never, ever be a replacement for face-to-face meetings."[152]

VCs *demand* face-time with their entrepreneurial supplicants, partly to signal who's who in a power relationship, but partly to secure high-bandwidth information about what's going on. When a Southern California start-up sent only its senior vice president to the East Coast to meet with Highland Capital Partners, the VC Bob Davis was not best pleased: "Why isn't [the CEO] here? Planes still fly from Irvine to Boston, last I heard."[153] As two investors in early-stage companies note, "Angels are aware that, ultimately, their assessment of a brand-new company may come down to instincts about the character and competence of the founder. And the best way to discover this is in face-to-face meetings, formal and informal."[154] A Southern California VC who wanted to stress to me how much of his job involved "objective criteria" nevertheless acknowledged that "there's also a big component of just how is the chemistry?"—a "chemistry" that could be realized only face-to-face. "How do you react when I look at you and say, 'Steve, you look great. Now probably sometime within the next year or two we're going to ask you to step aside. How are you going to handle that? Let me ask you that.' And I sit and I gauge how much you're lying to me and how much you're lying to yourself? And so that's *not* objective." And so, like many VCs, he tried to engineer situations of extended face-to-face interaction: "Part of it is, 'let's go to a ballgame.' At my old firm, we didn't do it too often, but when we could we'd get someone in a poker game. You'd learn a lot." So too could the entrepreneur: "At my old firm, we had one partner; his hands would shake when he was bluffing. You know? You knew this guy couldn't

bluff." Entrepreneurs were well advised to use close social interaction to take the measure of investors: "I know venture capitalists I would not have invest in my company because they're evil people, assholes. I mean truly, they are . . . Some because they're dumb as rocks and some of those dumb as rocks ones, they've got a Harvard MBA, but they're still dumb as rocks."[155] And the best way to find out who was evil, who was an asshole, and who was dumb was to spend some time with them. This is one of many reasons for the emphasis entrepreneurs and investors place on networking in general, but especially on those forms of networking that put relevant people into dense forms of interaction. "If you're sitting around the boardroom, around the table, it's all stiff," one Silicon Valley entrepreneur remarked. But "as soon as you're out mountain biking together, you're bonding in a way you just can't do otherwise." A participant in the intense geek-VC mountain-biking scene observed that "if you're not part of the peloton, you're not part of the deal."[156] "There are a lot of gear-heads out there," another Valley VC said. A typical bike ride in the Santa Cruz hills can take between one and four hours, plenty of time to talk about new investing and technological opportunities, even while denying that business is really happening: "We'd never admit that we're doing it for the networking . . . The people I ride with are basically tech execs, but that's not the main objective," he insists.[157] Bay Area VCs not keen on bicycles have been known to find similar potential for hair-down, personality-revealing interaction playing indoor court games. Brook Byers of Kleiner Perkins said that he only really discovered on the racquetball court that Howard Birndorf—one of the founders of La Jolla's Hybritech—had the entrepreneurial Right Stuff: "It was like a different person . . . It was like Howard unleashed. He was diving for balls, throwing himself against walls . . . He filled the room. That was the real Howard. I finally understood."[158] And, lacking opportunities for truly scenic mountain biking, an East Coast VC-techie scene features the invitation-only Nantucket Conference, a loosened-tie networking and family-fun event (visits to a whaling museum, a micro-brewery, artisanal chocolate and basket-weaving factories, lobster dinners) for VCs and entrepreneurs, where pitches and PowerPoint presentations are banned and an off-the-record policy is enforced.[159]

The whole object of action in this late modern world of future making is to be part of the deal, and being part of the deal means going along for the ride in the peloton. In so much external commentary on this world, there are two things that don't often seem to match up or make mutual sense: the ruthless instrumentalism and the clubbability, the bottom-line criteria

of leading-edge capitalism and the moral texture of networking among familiar people. And yet it's been the theme of this chapter that there is no contradiction and not much tension between these two features of the VC-entrepreneur world. People matter; their personal constitutions matter; their virtues matter. And the reason they matter has to do with the radical uncertainty of these future-making practices. You need to know about the virtues of people because there is little else you can rely on that is so durable and so salient. While there is a clear link with the premodern modes of familiarity that some social historians and social theorists assure us is "lost," the reliance on familiarity and the personal virtues is no mere "survival" of premodernity.[160] Such things don't belong just, or even naturally, to the premodern "world we have lost"; they belong equally, or even especially, to the world of making the worlds to come.