NOTE ON THE MANAGER'S ART

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Why Art?

Many management academics claim the manager's art should be to get the right information, draw the right conclusions, and issue the right instructions, all in a timely manner. Management practice certainly involves some of this, and measuring the results. But this is not art - and without the manager's art the business would not exist. The art can explain profit, rationality-based command-and-control cannot; at best, it limits losses. The curious history of thinking about management has persuaded most management academics to focus on mechanisms that are essentially impersonal and ignore the art managers create to inhabit the economic world, to give their business activity meaning. This Note pushes back against the inappropriately successful project to de-humanize management and deny its essentially artistic nature. It is an attack on the dominance of rigor, data-driven thinking, fetishizing objectivity, and the denial of what each of us knows about negotiating our own day-to-day. There is nothing complicated or academic about the discussion - though some will find its unfamiliarity off-putting. The thread through the Note is managers' knowledge, how and what they know and how they deal with not knowing. The firm's resources, perhaps scarce and valuable, and the firm's structure, perhaps appropriate, are peripheral rather than central to the analysis. Knowledge is power, for managers as well as politicians and military people.

The manager's art bears an illuminating relation to the art of telling a joke. Jokes work by leading the listener into an expectation which is then turned around in a surprising 'reverse'. No surprise, no joke, no laughter. The reverse works because the joker draws on what the listener knows already but has been 'tricked' into pushing aside. The joker shapes the expectation as a 'knowledge-absence', a 'not knowing what is going to happen next'. The listener's surprise comes from having known all along. The listener laughs because she/he cannot help knowing what was pushed aside and experiencing the pleasure of filling the 'knowledge-absence' - 'getting' the joke. Note the joker depends completely on what her/his listeners know before the joke begins. Thus, jokes are language games between the joker and a specific audience. There are no 'universal' jokes that will make any/every audience laugh. Jokes are creatures of a specific situation in which a specific audience can be 'tricked' into being surprised by re-discovering what they already knew. The surprise is pleasurable. Nasty surprises are not funny, too life-like. Entrepreneurs are jokers. They claim to be able to make something happen that others (the market) consider extremely surprising. The 'reverse' is when things turn out differently. The 'joke' depends what the market considers unlikely, so being surprised is not always a laughing matter, such as product recall or environmental damage. But the entrepreneur's ability to tap into a 'need' shows the market knew about the possibility of meeting it all along and had simply pushed that aside. The entrepreneur can only sell a product to those who believe it will work.

The first key to appreciating the manager's art is exploring how managers discover, handle, or manipulate market surprise. Snapchat arose from the intuition that users would be pleasantly surprised by landing on a photo-handling page rather than a text or web page. The firm's extraordinary valuation reflects the speed and low marginal cost of the app's adoption by millions of users, and the advertising reach entailed. This would not be surprising if it could have been predicted 'scientifically'. The firm's valuation as an alternative advertising channel would be much less. The manager's art is often practiced when 'external' change (creative destruction) opens up new opportunities that can be filled by 'surprising' products and services.

The second key is handling surprise in the interaction between the manager and those managed. The command-and-control metaphor de-humanizes by turning employees into passive instruments for faithfully executing the manager's decision, turning the business into a rational and predictable machine. It is less obvious that the metaphor reframes the manager as a god-like omniscient figure, able to know everything relevant about the market, the processes of creating and delivering the firm's products and services, and the market's response. Without this knowledge the machine grinds to a standstill. The clear majority of academic researchers are laboring to help managers towards omniscience. In practice, of course, this is completely wrong-headed and unrealistic. Managers know the business works because others make up for their knowledge-absences, the bounds to their knowledge. Adam Smith famously labeled this the 'division of labor'. Aside from pooling the knowledge of many, he also pointed out that carefully fitting the work to be performed to the operative's skills and resources made for a situation in which operatives would 'innovate' when their knowledge was inadequate to their assigned task. Without this 'local' exercise of individual imagination there would be no 'wealth of nations'. Instead of being defined as a rational predictable machine, the business is redefined as a social apparatus for harnessing the imaginations of the many to tasks shaped by the few (typically at the top). This is a model of astounding economic, social, and political power. It is a pity so few management academics find it worthy of examination.

In short, managing is not well illuminated as the application of a science. 'Management science' is but a small part of the larger body of management theory economists, mathematicians, and management academics have created since WW2. That work, published in the discipline's many academic journals, has done little to illuminate or improve managerial practice. Most managers ignore it, wisely. Talking about management as an art may be more informing. Even if there was a viable 'science of managing' it would relate to management practice much as 'theory' does in engineering or medicine; one of several guiding ideas or constraints to real-world practice. Wise professionals treat theory with more than a pinch of salt and pay close attention to their own experience. The facts and data of managing certainly matter but cannot ever determine managers' choices. Rather, as professionals, their choices reflect their complicated 'responsibilities' to the parties involved. Each situation and client is recognized as unique in some important respects and not easily subsumed under the abstractions of theory. This Note pushes back against thinking that under-considers managers' experience and judgment; managerial imagination is an essential component of the business. Managers are not mere observers computing data and issuing commands. At the same time, it is difficult to be clear about managerial practice when it is analyzed as other than the enactment of a theory; that is how we have been schooled to think about explanation. Theory has the tempting merit of being clear while practice is always messy detail. But the benefits of management's work arise through their business's practices, not their thinking.

Most business school academics fret that their view of management is more theoretically rigorous than relevant to its practice. They label the difference the 'rigor-relevance gap'. It is business school academics' deepest anxiety about their work and the future of management education. The story here is that the management academics' adoption of theory has served them very well, even if it has done little for managers or the world in general. Two highly influential reports and considerable funding precipitated the adoption of a theory-heavy approach in 1959. The plus was the reports helped establish what business school students should be taught and how faculty become qualified to teach. They helped determine what the academic journals should publish and so set the criteria for faculty promotion and tenure. The downside was that the academic activity was driven further from the anxieties and practices of managers. Curiously, academics were not required to demonstrate any knowledge of managing. Business schools became less involved in managing business and more with managing an academic community committed to studying a body of business-irrelevant theory, focusing especially on rational decision making - which is blessedly easy to teach and test. There is a longer story here.

But art is a puzzle too. Perhaps it cannot be analyzed or taught as a disciplined subject. What can be said about it that goes beyond 'mere opinion' as in "I think that painting/movie/piece of music is great - or horrible"? Fortunately, art is as old as civilization and there is 2000+ years of experience of thinking, talking about, and teaching art. Teaching art maps directly into teaching managing as an art. The concept of art it is less to do with artifacts, like paintings or operas, than with the artist's language, sometimes spoken, sometimes visual, that urges the audience member or viewer to 'see' the world differently. Behind this lies the assumption that we are never able to see things 'as they really are'. Rather what we see is not simply about the phenomenon or object beyond us, it is even more about us and how we see and hear. We have no immediate indisputable knowledge of 'reality'. We think with perceptions. Artists labor to manipulate or shift our perceptions, like jokers. If managing turns on managing others' perceptions - as in this Note - than it is clearly an art form. Crucial is that art's possibilities only arise because we do not (cannot) know reality 'for sure'. Rather we experience the world as inherently 'uncertain', beyond being known 'for sure'. What we know is a perception, one that can be shifted but one that can never encompass everything knowable. How do we arrive at our perceptions? No puzzle here; largely we are taught, but we also draw on our own experience and imagination. Few take an outsider's view without a pinch of salt. All of us exercise 'judgment' about our perceptions. Judgment points to our ability to arrive at a conclusion even when that cannot be explained rigorously. Science's promise is that it cuts out the need for judgment; it claims to present 'the truth'. In the era of 'fake news' we are being forced to consider these matters more carefully. But while facts may sometimes seem certain and undeniable, the problems run far deeper. All knowledge and all facts are squishy.

For many rigorous theory is the way to push back against this sloppiness. They claim B follows A whatever anyone happens to think about the matter; facts are facts. If only things were that simple! Aside from questions about empirically verifying such fact-claims, note facts are always expressed in language and we have no language that represents reality without being open to being replaced or improved. There is an unavoidable gap between the real we can experience and what we can say about it. This sounds pedantic and academic, but it is at the center of managing in real situations. It leads to the conclusion that management's severest challenge is to manage the language that brings the business into existence and sets limits to what will be considered, what ignored, and how what is considered should be valued. The flexibility here is illustrated when one person's scrap becomes another's raw material - as with pop bottles becoming fabric or used tires becoming huaraches. A complementary idea is the 'mission statement', often deeply boring but ultimately about the collective process of reshaping a business's particular language or 'operating system'.

One of the effects of over-valuing theory is that management academics over-value an engineered order, as in command and control. They also over-value motivation as a mechanism of control, the attempt to treat people as the business's cogs. There is a side argument about whether managers are entrepreneurs, the assumption being that many managers are mere 'functionaries', treading water, protecting their turf, and waiting for their pensions while real entrepreneurs take real risks. Schumpeter argued entrepreneurs 'set the economy in motion', a nice metaphor. It is obviously useful to see everyone engaged in the business as entrepreneurial in some degree, precisely because they experience uncertainty and must exercise judgment if they are to arrive at an actionable conclusion. Note the difference between confidence enough to act in the expectation of a favorable outcome versus proof that some effect will be caused. Managers inhabit the first condition, not the second. Academics fetishize the second despite inhabiting the first. Can they forecast the career consequences of publishing a paper?

Many argue business exists to serve society's needs. This is so contrary the obvious that the popularity of the idea is itself a researchable phenomenon. It seems better to presume business is a special activity within the socio-economy, limited by corporate laws and social norms as well as by managers' thinking and instruction, the investors' resources and market demand. Business is 'institutionally situated' in a specific part of a context that is social, legal, historical, physical, and so on. It does not take place in the abstract 'perfect market' universe so basic to economists' thinking. Economists define firms as 'production functions', an expression of their capacity to transform inputs into outputs - say steel sheet and paint into automobiles. A production function can be rigorously defined. This is useful for economists but obscures what managers know - that steel sheet and paint does not get transformed into automobiles without a huge exercise of judgment, the many large and many itty-bitty judgments made by the hundreds of people involved in the plant construction, model design, parts acquisition, assembly, testing, selling, and so on. Being in the real world the firm's operations inevitably generate entropy, the physicists' way of pointing out that where there is motion there is always friction and loss. Economists call this 'transaction cost'. Part of managing is minimizing transaction costs, what used to be called inefficiencies. But the deeper idea is that a business must be able to generate new value, not only so shareholders get a return but also to overcome the entropy being generated.

Where does this new value come from? In the 18th century many presumed all economic value sprang from Nature. Those were agricultural times and everybody saw how a seed planted could flourish into a crop worth far more. Adam Smith is famous for many reasons but, as noted earlier, also because he argued to the contrary, that new economic value came increasingly from the imagination of those involved in manufacturing. This is a consequence of the division of labor. The economists' production function presumes the outputs are equal to the inputs, save for the entropy-related losses from frictions and inefficiencies. At best, the production function is a mechanism for coordinating buyers and sellers (markets) and across the divisions of labor (hierarchies). No economists can explain how economic value gets increased. Yet the obvious story of recent decades is that the spread of democratic capitalism has created massive economic value that has 'raised all boats' and 'lifted millions out of poverty'. Managers generate returns to investors, the 'local' process of generating new value, but they have also had a huge impact on the human condition, mostly but not entirely beneficial given the ecological and social costs of economic activity. But with so little understanding of value-creation among economists and management theorists there is little understanding of what managers do - and that is a real problem for us all.

The pre-Smith view of economic activity was 'extractive'; new value was drawn into the socioeconomy from Nature. The 'costs' were ecological even if seldom calculated. The post-Smith view, that new value was drawn from the human imagination seemed more eco-friendly. But it seemed a different kind of value, less tangible, less edible and more to do with services. While few economists explore how managers create value today, there is a substantial pre-1900 literature. One view is that value is 'relative' and intangible rather than tangible, that there are no absolute values determined by Nature. The idea is closer to 'what the market will bear'. Air is plentiful and highly useful but seldom highly valued. Diamonds have only limited use, yet are highly valued. This opens up the possibility that businesses create value by taking in something - factors of production - that are not highly valued and transforming them into outputs that are. Value creation is then more about perception-management than extraction. Sometimes the possibilities for changing perceptions are determined by Nature. The discovery of a plentiful supply of lithium, important for 'phone batteries, reduces cost and value. When values are based on the way the socioeconomy operates right now, re-branding can raise value just as product recalls reduce it. This Note leans towards managing as perception-management and so reduces the importance of inefficiency-based arguments that underpin the traditional academic intuitions of what managers are supposed to be doing. The discussion of perception-management raises the importance of advertising and marketing, clearly more important today than in times past. This, in turn, shifts attention to management as the generation and use of persuasive language, not only to persuade buyers, but also to the providers of imagination that shift values.

Managers' Knowing and Academics' Theorizing

This section of the Note addresses the interplay of theory and experience and the processes that lead to managerial knowledge. It is grindingly academic but nonetheless central to appreciating what managers do and how their firms and the socioeconomy benefit. OK, we know that managers do not think as academics do, but it is challenging to put flesh onto this view. Academics often think themselves managers' superiors thinking-wise; which, regrettably, leads them to ignore managers' thinking. Academics are enamored with explaining everything in terms of rational decision-making and, perhaps, how some people are biased or 'stupid' in departing from rationality. Academics presume they are thinking 'right' and that managers would do well to think like them. Of course this leads them to miss the essence of managing - dealing with surprise. Academics do not know managing's purpose - which is tied up with surprise, profit, competition, politics, uncertainty, and so forth. They do not know what firms are or why they exist - a point famously made in 1937 by the English economists Ronald Coase, awarded a Nobel Prize in 1991. The difficulty with this section reflects the extent to which we have been convinced that explaining something means fitting it into a rational model. No doubt that is one mode of explanation and often appropriate. But it is not the only way we explain (as in make sense of) what goes on around us. Business may well have rational elements but it is also has social, psychological, and political aspects that cannot be understood through the lens of rationality. Neither, in fact, can economics, in spite of many economists insisting otherwise.

What other modes of explanation are there? This section's difficulty arises because it presumes business is a creative, artistic activity that projects managers' 'entrepreneurial imagination' towards the uncertainties of the socioeconomy. Instead of simply pointing at art, it delves into the processes of bringing imagination to bear on managerial practice. The background is language. We only 'know' what we can say. Of course we have intuitions and emotions and feel, love, fear, abhor, are curious, excited, and so on. But the core of managing is knowing, learning, thinking, judging -

through language. Managing is a talking game, persuading others to do what is needed. It goes far beyond being explained with rational models of incentives or punishments.

A firm is a 'local language' specialized to a particular place in history, the economy, and the lives of the people engaged and affected. Management's most fundamental task is to develop a practical language that helps those involved know what to pay attention to and how to value and act on what is considered, where to project their imagination. This language is more complicated than any rational model. Looking into it requires some familiarity with the philosophy of knowing - technically known as epistemology. Purely logical languages - 'formal' languages like mathematics or a computer language - offer epistemologies that allow only rational reasoning. By definition they are incapable of considering the managerial imagination, the human capacity to 'judge', to arrive at conclusions that cannot be explained using formal language. Imagining cannot be coded, just as AI cannot ever capture managers' judgment. If imagination (judging) lies at the heart of why firms exist, a different epistemology is required. The alternative to formal language is 'natural' language - the way we actually talk about the world. Natural languages are not logically constructed. They embrace contradictions of many types and thus carry surprises. Natural language lets us talk about imagination - as this Note is doing. Ironically we all know this, yet have so fetishized rationality that other ways of thinking about managing have been suppressed, even silenced. Academics have their institutional reasons for allowing this. But those wanting to understand managing and profit need something else.

The ideas mainstream management academics share are typically about design and efficiency, especially as the discussion reaches into 'testable hypotheses' and theories of 'how organizations actually work'. Recently there has been a surge of interest in 'organizational design', asserting it should be as central to managing as 'product design' is to Apple Inc. The focus is on (a) rational decision-making, fitting organization design to market opportunity, followed by (b) motivating the personnel hired to populate the design chosen. The organizing principle behind the design-and-motivate discussion is logic/rationality with rigorous analysis of data collected about the firm's performance and the product market. Big data techniques expand these possibilities. The manager's aim is to ensure their firm engages the market's discoverable needs as efficiently as possible and exploits the fast-flying windows of opportunity in a more timely and efficient manner than their competitors. In particular, business opportunities exist when there are 'market failures' and existing firms are unable to meet known needs. Many of the 'airport' books on management recycle these ideas. They may not be all that useful. In particular they elevate logical analysis over practical experience, defending academics against managers who question rigor's relevance to their situation.

Market research presumes the appropriate facts are lying there waiting to be discovered, that they pre-exist the research process. This is obviously not the case when managers create new markets in order to create new value. New markets can be imagined and brought into being along with new products and services such as iPods, Business Class seats, or Facebook. These were imagined before they existed. Managers know creating a new market is often part and parcel of creating a new revenue-stream. Given the maturity of advertising and market research - tools widely available and no longer a source of competitive advantage - market and business model 'innovation' have become today's strategic watchwords. How can innovation work? It is only possible because the situation is not 'fully known'; by definition innovation goes beyond what is known. But with what mechanism? Paradoxically, the consequences of innovation cannot be predicted. Who could have guessed today's mobile 'phone business 30 years ago, or the decline of smoking? The analysis shifts from value shaped and limited by natural science and towards value that is more flexible and socially determined. It points towards the powers and limits of the language that binds people into society. Facts cannot ever escape their language; they are its prisoners. Language and knowledge are intimately related. Saying something is both to claim knowledge and to share it. Facts are verifiable claims or 'justified true beliefs' (JTBs) shared with others. However a factual statement is clearly not the same kind of thing as the event observed or experienced. The factual statements that comprise our knowledge cannot reach beyond language to the objects or events themselves, no matter how secure we feel about our claims.

The questions here are aspects of what philosophers call 'epistemology', the study of knowledge or how we claim to know something. One way to read this Note is as an attack on mainstream management scholars favored epistemology. Managers need and use something different. In which event academics prevent themselves from understanding managers and the rigor-relevance gap mentioned in the previous section is a self-inflicted wound. The epistemology discussion is often frustrating, the kind of academic pedantry that gets in the way of management practice and gives professors a bad name. But important things are seldom simple. How we think is important. Our minds work in ways that trap us within our epistemological assumptions. There is no way to escape to 'brute reality' or definitive knowledge of reality. Once we abandon the false hope of a for-sure (true) epistemology, the risk is less one of being 'muddled' - common enough - than of getting one's epistemology 'wrong'. Lacking access to truth we depend on how our chosen epistemology relates to our purpose. We go wrong by adopting an epistemology that is inappropriate to illuminating the purposeful practice in which we are engaged. Medics call this misdiagnosis, important because without a diagnosis they cannot make reasoned decisions about treatment. They are aware of the risk of adopting the wrong model of the patient's condition and prescribing the wrong treatment.

Given there are no correct answers, epistemologies are like societies, always changing. The Enlightenment was a time in which European religion-based epistemologies gave way to more practical thinking. Since then the natural sciences have sharpened up and drifted away from the 'liberal arts', two 'cultures' diverging. One focuses on science and the 'objective facts' of the world, the other on people, on how we feel, perceive, and interact. Since WW2 management academics have become over-committed to the epistemology of the natural sciences. Their analyses have become increasingly rigorous. But even with the rise of automation, AI, and high-speed trading, business is always about people and we are still a puzzle to science. Managers inevitably face questions for which science's rigor is not sufficient or appropriate. That we are not able to analyze the creation of new economic value is a strong signal that management scholars might do well to test out alternative epistemologies. In particular, complain that the adoption of 'rational man' models of people eliminates almost everything important about managing. Instead, to speak to the fact that most of what we know about ourselves denies the usefulness of rational man thinking.

Managing the Opportunity Space

Managers can always appear to generate value by eliminating inefficiencies from existing processes, thereby reducing loss of the value already created rather than adding new value. Innovation generates knowledge that does not already exist. How can managers drive innovation? The pop-psychology (or snake oil) literature on increasing one's imaginative power is surprisingly successful, a 'whack on the side of the head' along with eating right and exercising. Such broad advice-giving seems to be the opposite of managing, which is always particular and specific to a context. Innovation is not simply the exercise of aroused imagination; it requires disciplined focus on the business's special opportunities and challenges. Innovation is contextualized. Much of the popular management literature is about psychological and social behavior in general. It fails to recognize business's special role in society, so its managerial implications are hopelessly diluted by their breadth. The lessons to be learned from military history or sports coaching are less relevant because they ignore business's defining aspects - first, the pursuit of profit and second, the harnessing of others' imagination to the shareholders' interests. Doing science is likewise different from managing a business.

Obviously, managers can learn of business innovations not already captured in their firm's language by listening to what others say, being informed, even by reverse-engineering. We pick up new knowledge by listening and observing. But we only hear language and get no direct access to the knowledge it might convey. Listeners and observers must decode the signal, interpret the message, and transform it into relevant knowledge. Academics labor to generate good theory as a rigorous language so that all who share it, including managers, can acquire new knowledge in a systematic and disciplined manner. But what of knowledge not already captured in language, perhaps because the innovation has not yet happened? The crucial notion here is 'experience', to note how it can reach beyond what has been captured in language. Our experience is not limited to what we know, we can have experiences we do not understand, that we cannot 'verbalize'. Innovation is the practice of going through the gap between what we know and what we can experience. The gap is an 'opportunity', new language how it gets 'occupied' and 'owned' in the pursuit of profit. The other way to occupy a knowledge-gap is via practice, to build a viable business within it. To do it rather than say it. Business used to be defined as meeting unmet needs and innovation implies going beyond repeating another's business language or model. A century or more ago entrepreneurs seldom stopped to 'verbalize' what they were doing or why it worked. Secrecy was preferred to transparency. In 1904 the economist Thorstein Veblen argued that for a business to survive its managers had to know things about the business no-one else knew, including its directors, shareholders, and customers - that profit depended on knowledge asymmetry, differences in valuation. Today venture capital expects an explicit business plan with the potential to persuade investors to part with their money.

The relation between experience and language is troublesome and has attracted a great deal of attention. It is the focus of 'methodology' courses. Difficulties arise because we experience events (a) individually - as EF Hutton had it, 'one client at a time' - and (b) without being able to grasp any one event in its entirety, there are always things we do not know. The (a) bit is that we do not know how to categorize the event. There is a loud bang; is it a shot, a traffic accident, or someone moving furniture? The product failed with catastrophic results. Our 'diagnosis' brings the event into a language, but we may have the wrong language; there is no 'right' language, simply one most suitable to our purposes. Managers are frequently reminded of the importance of categorizing events in ways that best help them influence their situation, and of the consequences of getting it wrong. They are cautioned to respond less and listen more, especially to 'the other side of the story'. The (b) problem is likewise; do not be too hasty, let the under-considered factors surface. There are plenty of airport books along these lines.

Largely for methodological and professional reasons, especially given the competition for status, academics are attracted to the scientific method. It is simple to explain, apply, and examine, and claims better diagnoses. Should managers use it too? Certainly it seems good to claim an analysis is 'scientific' and 'factual'. But there are several downsides. The scientific method is oriented towards generating generalities - categories. It simplifies out the (a) above, the uniqueness of the event being categorized. Which would be fine if there was no (b), reason to worry about what is not known - what Rumsfeld famously labeled the 'unk-unks'. The scientific method simplifies the pursuit of generalities by ignoring the unk-unks. Managers must also simplify as they wrap their minds around an event. But for them simply ignoring doubts is risky. Academics ignore doubt and are typically over-confident in their prescriptions, couched as 'in general' rather than about on a specific situation. In contrast, managers always bear responsibility specifically and are wise to carry on doubting, living with a state of perpetual anxiety about incoming 'unk-unks' that might upset their plans.

Even though the scientific method is often misunderstood it can reveal something important about how fresh experience is brought into managerial language. These days, students are often taught science works by 'falsification'; that a single counter-example (a 'black swan') falsifies the theory (hypothesis) that 'all swans are white'. Science works by coming up with falsifiable hypotheses that stay in use until falsification happens. This is naive and grossly underestimates the problem of creating and testing hypotheses. Without a for-sure epistemology all statements are doubtful. The doubts can never be removed, though many assume they can be reduced, that we can progress towards perfect knowledge by working methodically, that 'in principle' reality is knowable. This is not so. Probability does not work this way, a run of reds does not increase the likelihood of a black. The chimera of perfectibility causes analysts to miss completely what is most relevant to managers. Unlike academics who ignore doubt, managers' 'stock-in-trade' is being able to identify, embrace, and engage doubt and surprise, and turn them to their advantage. Yet the scientific method is still interesting because it pays attention to experience as an 'un-languaged' category of our knowing. Academics searching for generalizations overlook the scientific method's dual nature, its attention to both the languaged and the experienced. Managers can use it to search for opportunities and thence economic value by exploring what can be experienced but not explained, and the knowledge-gaps suggested.

The manager's artistic 'trick' for generating the new language is to use multiple languages. The scientific method shows how this works, but it requires closer attention to language's construction and use than is usual. Falsification claims a hypothesis H (that all swans are white) can be refuted by observing a prediction h (that that particular swan is white) failed - that particular swan is black. But this is a naive view that hides crucial problems. First, a language cannot express its own negation. The absence of evidence means little. Thus, h's non-appearance is 'negative evidence' that cannot do much beyond raise doubts - surely the bird was a swan and, as such, supposed to be white? To bear strongly on H's validity more positive evidence is required - 'a black swan was observed at such a place and time' - which goes beyond 'no white swan was observed'. Positive evidence q is required, a statement in an observation language Q which, in this case, defines black positively, not as any variety of whiteness.

The 'trick' is to realize that if anything new is to be learned from an observation, transforming the experience of surprise into knowledge, tautology must be avoided - meaning that q statements are not simply dressed up h statements (black as a version of whiteness). If one of the defining characteristics of swan-ness is whiteness (swans are white birds - by definition) the claim to observe a black swan is nonsense, a contradiction that cannot arise in any language. The key is to realize the H and Q languages - swan-ness and white-blackness - must differ fundamentally if the appearance of q is to conduce new knowledge. With further knowledge, it may seem the black bird observed was a a rook - in part defined as a non-swan. Technically speaking the H and Q languages must be 'incommensurate' which means they stand on different assumptions (axioms) - illustrated by the way bird-type and shade do not go together necessarily (are not related or collinear). The analysis here will be familiar to those who have played around with syllogisms - the best-known being "All men are mortal. Socrates was a man. Therefore Socrates was mortal".

The bottom line is that we humans have an evident ability to generate new knowledge about the world we inhabit by interplaying various unrelated languages (ways of knowing) to 'make sense of' (capture) being surprised by our experiences. This type of practical knowledge hinges on our ability to experience things; it is about us and how we know, not about the essences of the thing experienced. Note especially that it is not a gradual revelation of 'reality' - echoing the commonplace naive science epistemology that presumes reality is rational or logical. This new knowledge is experiential, captured with new language as its container and related to how we know. The new knowledge is the fruit of our imagination, a judgment. It is not new insight into reality. The 'learning' creates a new relation between what we previously knew as unrelated. Instead of rejecting experience - claiming the report of what happened cannot be true - we let experience drive us to create new knowledge by creating new language that can be wrapped around or contain our surprise. We transform what we previously thought nonsensical into new knowledge, preferring the evidence of our experience over its seeming illogicality.

New knowledge can only arise where present knowledge is incomplete and inadequate to capturing experience. We transform surprise into new knowledge by judging as related what was previously considered unrelated. This defines us as 'non-omniscient' (i.e. human!). Indeed the concept of human knowledge depends on its being limited, bounded in some fundamental ways. The medieval philosophers phrased this as our inability to enter God's Mind. Only since the Enlightenment have we imagined we might do this. The resulting naive science view is that our knowledge 'corresponds' to reality. Which leads on to the view that since Nature is constructed logically (we presume) everything knowable can (eventually) be captured in rational (formal) language - scientific theory. But being unable to enter God's Mind, the epistemology we adopt to deal with our non-omniscience is never 'given' - it is a matter of judgment not rational choice. Who knows if science is 'correct', that the laws of physics not someday be overturned? We know that a naive science epistemology is not very useful for managers precisely because it pays little attention to our knowledge's limits - the knowledge-absences we experience. It explicitly writes out our imagination and capacity for innovation, and our ability to progress through an ever-surprising world. It ensures we can never address profit. It ensures we are not able to understand firms or managing them.

Adopting a judgment-base epistemology makes it possible to define entrepreneurship as a special kind of sense-making - applying judgment in economic situations in the pursuit of profit.

Managing the step beyond entrepreneurship to manage others' imagination in the pursuit of profit, articulating the entrepreneurial idea into a managed system of people with skills, knowledge, and imagination along with the resources they need to generate the value-producing experiences anticipated.

One more complexity: the naive science view admits only one type of knowledge-absence - ignorance of what is presumed real and discoverable. It forces us into a narrow view of the human condition that has all kinds of implications. One being to undercut our faith in our imaginative capacity to make new sense of our experiences. Aside from denying our humanity, it opens us up to being overly persuaded by others who seem to have attributes we lack - IQ, qualification, religion, etc. Managers need a more democratic epistemology that can embrace different kinds of knowledge-absence. Beyond ignorance we experience 'indeterminacy' when dealing with others similar to ourselves. Rather than the naive imperial-science model of human kind (a white-coated male scientist) interrogating Mother Nature and prodding her to respond to our experiments, we adopt a more heterogeneous social and democratic metaphor. We are surrounded by other people who are not the same as us and interrogate and interact with them. Since we can never enter their minds we can never be sure of how they will respond to our actions. Managers are more likely to get tripped up by their specific situation's inhabitants and indeterminacies than by their ignorance of reality. Lacking complete knowledge managers must make judgments about others' responses to their actions. Game theory shows us that we can only anticipate these responses correctly when we have a rigorous and correct 'model' of those affected, and we seldom have anything approaching this. Next to ignorance and indeterminacy we struggle with 'incommensurability'. Since our knowing is always (a) limited and (b) captured in incommensurable languages, we must synthesize whatever bits and pieces we have available into a coherent story or 'rationale' if we are to explain our practice. This third type of managerial judgment is completely distinct from the other two. Finally, there is 'irrelevance', the experience that the new language is not giving us a good grip on the world, there is too much slippage between thinking and experience. The management scholars' rigor-relevance anxieties express their judgments about the irrelevance of the language they deploy in academic journals and business school classrooms, generally based on a positive feeling that goes far a sense of being ignorant of business's realities.

Managers are never able to see the reality of the situations they are responsible for, so they must assemble a reasonable story that persuades others to apply their imagination and develop innovative practice that occupies the knowledge-absences and so lead on to profit. This is a long sentence, better expressed as a picture (see Figure 1).

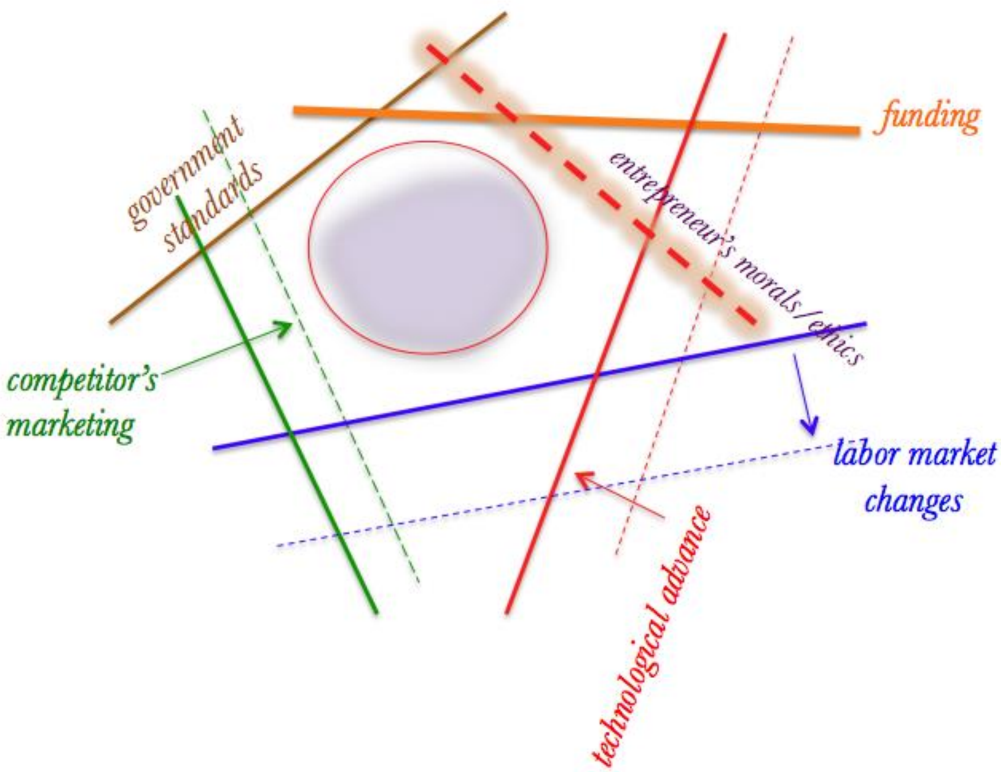

Figure 1: Sketching the Opportunity Space

Empirical research into how managers talk, displaying their thinking, suggests businesses develop languages that synthesize around a dozen incommensurate types of knowing. Creating and choosing these is the core of the manager's task. In short, the CEO's most fundamental task is to control the language that those comprising the firm use to go about their business. It indicates both (a) what should be paid attention to and (b) how to value and prioritize what is noted. At the same time, talk that does not fit within is deemed irrelevant, silenced. It no longer confuses and distracts.

Business model innovation is a clumsy term for reconstructing the business's language, rehabilitating the 'vision thing'. The business's language (strategy) synthesizes what is known about the constraints to the business's intentions, opportunities, and practices. Sometimes these constraints are physical, the lack of necessary resources. Sometimes these are legal, normative, or social, reflecting the institutionalization of the situation in which the business is embedded. Sometimes the constraints are cognitive, being unable to imagine a better way of thinking and analyzing the situation. The constraints interfere with generating the practices that move the business forward towards its goals. As a manager selects the constraints to characterize the business's situation, each carries its own kinds of knowledge-absence. Rather than agglomerating indisputable facts the manager synthesizes by applying her/his imagination to the specific situation's knowledge-absences. For instance, managers often complain about the lack of resources. But resources are seldom absolute, not subject to how they are imagined. As noted earlier, much entrepreneurial business is about up-valuing what others think of less value. It is easy to see a tool has little value to someone who does not know how to use it. Dealing with indeterminacy may be more interesting, negotiating with others with the power to constrain the business. New value arises because the negotiation leads to advantage in a non-zero-sum situation, requiring judgments about the other parties.

Concluding Comments

The argument is that managing is the artistic practice of developing and applying 'local' firm- and context-specific language. This is deployed to persuade others to apply their imaginations to generating the innovative practices that seize and occupy the economic situation's uncertainties or knowledge-absences, leading to the possibility of profit. The approach stands opposed to the naive view that managing is gathering factual data and analyzing it rigorously to discover the optimal plan it hides, that the business world is rationally constructed. The metaphor of rational decision-making obscures managers' practice. Management can be more clearly defined as rhetorical practice in situations of doubt and uncertainty. Fortunately, we know a great deal about the use of natural language to persuade and there are many airport books available. Not all align with this Note; ironically, some even suggest a new formal theory or science of persuasion, missing the epistemological point (and the history of managing) entirely. Others fail to notice that science itself is an institutionalized rhetorical practice, standing on the axiom that experimental evidence is a privileged way of talking - even though all scientists concede we never know anything for certain. Science cannot escape its language, so methodology always reigns over experimental findings.

The implications are extensive. First, that managers appreciate they are participants in a local language game and set their expectations accordingly. In a democracy power lies mostly in the ability to shape language and translate its use into directed behavior. Rhetoric rules. There is no escape to 'facts', to numbers that rule and seem to deny managers' judgments. Second, theory is no more than a privileged language, one mode of knowing among others. It speaks of generalities. The manager, responsible for a unique situation, must synthesize any theory judged relevant with less general modes of knowing; specifically to resist the temptation to presume theory determines practice. Thus managers cannot escape responsibility for the value and ethics aspects of their practice's consequences. Third, the firm-as-language is utterly flexible since it is not constrained by 'facts'. This is a plus, in that 'organizational change' is freely create-able. The commonplace idea that organizational change is difficult is a mis-diagnosis; there is nothing solid to resist change. Organizational change and innovativeness become challenging when managements' rhetorical practices falter, when the people involved are unwilling to be persuaded. Blaming employees for management's rhetorical failures is not a useful way to go. Fourth, the firm is the language that determines the meaning, value, and uses of its 'resources'; the market's definition is irrelevant. Fifth, the process of bringing new people into the firm is one of educating them into the firm's language, enabling them to 'get with the program' and then act and judge in an imaginative but firm-oriented manner. Importantly given the rhetorical nature of the firm is not readily visible, getting into play can be tough. This protects management's power; consider how special meanings and arcane jargon develop. Sixth, the importance of meetings becomes clearer. These may well be time-wasting but there is a constant need to re-examine and re-construct the firm's language in the light of new experiences - and to re-educate others into the new language developed. The rhetorical processes are difficult, though much can be learned about how to make them more efficient. Seventh, it is clear why imitation is so poor a business strategy. Those observing from outside the firm as a context of imaginative practice cannot reach into its subtleties and tacit dimensions.

Arguing that management is an art is itself a rhetorical device to justify prioritizing managers' judging over their rational decision-making, their use of natural language over formal language and theory. The mainstream view subordinates managers' judgment to the myth that the business can be explained in formal language, that managers must labor to fit the business to some prefect model. This may well be management academics' signature belief and justify business as a teachable discipline. But it is irrelevant to managers' value-creating and profit-seeking practice. It disempowers managers and makes them irrelevant - until AI takes their job away completely. To the contrary, the demand for managers' art is those aspects of business that AI cannot 'colonize', the regions where rationality fails. Given positive transaction costs, firms that survive show there must be such regions because new value only appears where perfection fails.