Heroes for a Wicked World: Ender's Game *as a Case for Fiction in PME*

By

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Approval

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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About the Author

Lieutenant Colonel Jason M. Trew is a native of Covington, Louisiana and a 1999 graduate of the US Air Force Academy. His assignments include flying the F-15C and T-6A and serving as an Air Liaison Officer to the US Army III Corps and CJTF-76. Most recently, he served as Director of Operations and academic instructor at US Air Force Air Command and Staff College. For his post-SAASS assignment, he was selected to pursue doctoral studies as part of ACSC's faculty development program.

Dedication

Life is not always a choose-your-own-adventure story, but applying to SAASS was a deliberate choice that my family and I knew would involve sacrifices, if I were accepted. The great amount of time and effort spent on this thesis is just one example. Therefore, this project is whole-heartedly dedicated to my family. To my children, thank you for listening to my stories and I hope you always want to tell me yours. To my wife, of all the stories in the world, my favorite is ours. As we start another chapter together, I cannot wait to see what happens next!

Abstract

According to the current Air Force Doctrine Document on Leadership and Force Development (AFDD 1-1, 8 November 2011), telling the Air Force story is an important leadership competency. Additionally, officers are increasingly told to consider the role of strategic narratives in military operations. Unfortunately, Professional Military Education (PME) has no coherent approach to teaching storytelling skills. This neglect reflects a larger cultural bias against storytelling that has roots in the beginning of Western civilization. Other large organizations and professions, however, have already realized the power of stories and adopted programs that integrate storytelling into leadership and management practices. Stories are especially potent tools for innovation. Thus, when General Kwast charged Air University with producing heroic innovators, the growing body of literature on narratives was a natural starting point to look for a new approach within Air Force PME. Although there are many ways to nurture storytelling skills, the use of fiction is well supported by theoretical and empirical evidence. This thesis examines the use of a science fiction novel, *Ender's Game*, which has content and a structure particularly apt for the challenge of encouraging innovative airmen.

Preface

Blame Plato. He ruined it. At least, *that's my story and I'm sticking to it*.

Plato inaugurated a tradition in Western culture—the dominant tradition in Western culture—that overemphasizes the rational and underemphasizes the artistic, the intuitive. Of course, this dichotomy is overly simplistic. What it loses in *fidelity*, however, it gains in *coherence* and we judge narratives by a combination of both criteria. This thesis, *like all explicit human communication*, is a narrative. In fact, this thesis is a narrative about the potential of narrative; a story about stories.

Any story worth expressing entails a breach and then some sort of recovery from the unexpected. Plato's ideas created a breach in the Western mind. The solution is a wide-ranging project that rests with resolving the dilemmas of postmodernism. This thesis is a minor sub-plot situated within that larger story. In *this* story, the breach is the recognition that the education of US airmen is insufficient for the challenges of emerging security environments. In one sense, the hero of this tale, the one who can help resolve the struggle, is fiction. Fiction in Officer Professional Military Education (OPME) is one technique for cultivating innovative thinkers because innovation requires (among other skills) expertise in a domain known as the narrative-rational. It is a domain that spans far beyond just fiction, beyond literature, and beyond the two modes of thinking it subsumes: the narrative mode and the rationalistic mode.

It turns out that the narrative-rational is *the* mode of any human expression that appeals to reason, or value, or action. Yet, in arguing for this concept and for its utility for OPME, I will distill its universality into a particular test case: the use of a specific book in a specific school.

This test case is only one possible story. This is not the only story. It is not the whole story. It is a choose-your-own-adventure tale wherein I have chosen both the beginning and end of the story line. That plot will bring us to the use of a science fiction book, *Enders Game*, in OPME, but it will start with the Greeks.

The Greeks are a logical place to start. Christopher Coker, Professor of International Relations at the London School of Economics and Political Science, writes "the Victorians recognized something that we often do not in twenty-first-century anthropological study of Greek culture. If the Greeks were a tribal society, they were *our* tribe. They demonstrably forged a past that made possible the European creation of modernity. They are the source of the way we still

think about life and the world."[1] Those influences are evident in our language, in our sciences, and in our arts.

In this thesis, the Greeks will also provide metaphors for the two domains that Plato split: the Apollonian realm represents the rational and ordered, while the Dionysian image represents the artistic, intuitive, and emotional.[2] According to Greek mythology, Apollo and Dionysius were both sons of Zeus. Zeus ruled over the other gods from atop Mount Olympus, hence the narrative-rational could justly be labeled the Olympic domain: a superior perspective that subsumes the Apollonian and Dionysian under a common lineage.

I will reference the Dionysian and Apollonian metaphors throughout the thesis. There are other offspring of Zeus I will mention only this once: his nine daughters, known as the muses, who served as goddesses of inspiration.

The inspiration for this project accumulated over the three years I spent at Air Command and Staff College (ACSC): one as a student and two more as an instructor. The experience was transformative for me, intellectually and professionally. It was an opportunity to study familiar topics in depth, but more importantly, faculty members exposed me to a variety of concepts and sources I had never considered to be germane to flying airplanes or even to officership.

One of those unfamiliar fields was fiction. I have read literature for entertainment and was obligated to read a small amount of literature as part of my undergraduate education. I felt strongly, however, that there were too many other works of fact to waste my time reading works of fiction. At the top of my list of genres to avoid was science fiction. So, as ACSC cleared out books that were no longer in the curriculum, I was perplexed to see hundreds of copies of a book I had never heard of, but which was obviously a science fiction novel, *Ender's Game*.

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1. Christopher Coker, *Waging War Without Warriors?: The Changing Culture of Military Conflict* (Boulder: Lynne Rienner Pub, 2002), 16.

2. These metaphors, while inspired by Greek mythology, are not strictly based on Greek mythology. Their use is prominently associated with Nietzsche's *The Birth of Tragedy*. The terms, however, were used before and since. For more, see Adrian Del Caro, "Dionysian Classicism, or Nietzsche's Appropriation of an Aesthetic Norm," in Journal of the History of Ideas, Vol. 50, No. 4 (Oct-Dec, 1989): 589–605, Camille Paglia's *Sexual Personae*, or Nassim Taleb's *Antifragile: Things that Grow from Disorder*.

With great hesitation, and only upon the insistence of an insightful colleague, Lt Col Ira Savoie, I decided to read the 1985 work by Orson Scott Card. My initial motivation was to try to understand how such a book could ever have possibly fit in the ACSC program (which it obviously no longer was). By fate or good fortune (Tykhe is the Greek goddess of both) a spate of other factors converged in my mind at roughly the same time: the role of narratives in organizations, the value of stories for leaders, and even the power of fiction to do much more than merely entertain. *Could storytelling really help make sense of complex situations? Was storytelling really an integral component of military strategy? Were we really failing in our duty as educators if we were not teaching, and demonstrating, the skills of poetry and rhetoric?*

With these questions unanswered and the deadline for this thesis topic approaching, the arrival of a new Air University commander could not have been more fortuitous (thank you again, Tykhe). Lt General Stephen Kwast's call for a transformation, which will be discussed later in the introduction, became the spark that ignited the amorphous cloud of ideas that had not yet cohered into a manageable project.

Indeed, it may be an exaggeration to call this manageable. I failed to bound my topic as tightly as prudence (and my professors) would recommend and many avenues of research were still not exhausted.[3] Tighter confines would have permitted a deeper analysis but at the cost of the two criteria of narrative-rational communication: coherence and fidelity (i.e. does the story *hang together* well and does it sufficiently adhere to one's view of what matters in one's perception of the world?).

So, I opted to follow the example of Colonel John Boyd and approach the challenge of encouraging innovative airmen by "making snowmobiles."[4] Plus, there is no clear academic discipline that can claim ownership over the nexus of fiction, rhetoric, leadership, education, innovation, and strategy.

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3. As Prof. James Kiras advised me, it takes discipline to adhere to an academic *discipline*.

4. For Boyd, it was fundamentally important to pull concepts apart (analysis) and then mix them together (synthesis) in creative combinations. He often told a vignette that combined images of skiing, cycling, boating, and a toy tractor to illustrate this point. From these objects Boyd asked his audience to combine the skis, the bicycle handles, the motorboat engine, and the tractor's tank treads. What was the result? His answer was snowmobiles, which became shorthand for adaptive learning: "A loser is someone (individual or group) who cannot build snowmobiles when facing uncertainty and unpredictable change" (Frans P. B. Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (Cheltenham: Routledge, 2006), 218.

Finally, many epic tales employ intermediaries to assist the characters along their journeys. In reverse chronological order, I must thank my thesis advisor, Dr. Everett Dolman—the gatekeeper who could have easily shackled my research. Instead, he graciously allowed a wide degree of intellectual freedom to pursue a topic that undoubtedly would have been out of bounds with others. Next, the faculty and staff of SAASS and the students of Class XXIV were all instrumental in shaping these ideas: day after day, in the classroom and out, through face-to-face conversations and a steady stream of off-the-wall (yet oddly relevant) websites. Prior to this year at SAASS, I was lucky enough to be part of the ACSC family, where I was the beneficiary of many hours of direct mentorship and witness to some truly superb educators: Dr. Michael Allsep, Lt Col Paul Kirmis, Dr. John LaSaine, Col. Robert Lass, Dr. Sebastian Lukasik, Lt Col Bridget McNamara, Dr. John Reese, Dr. Paul Springer, Dr. John Terino and many others. These names are now added to the list of all the other mentors and instructors that have invested their time in me. I am forever grateful for their guidance and inspiration. Finally, I must also thank a man I never met, but has inspired me by providing a target to rally against: Plato. For me, this story starts with him and ends with a boy named, fittingly, Ender.

Figure 1. Holland House. Readers searching for material in the library at Holland House during the 1940 German bombing of London known as the "Blitz." Reading was powerful enough to these Londoners to wade through the wreckage for books. At the same time, across the English Channel, their enemy banned some books from fear that reading them was *too* powerful.

Source: "Resilience of the Library." Insightful Travel and Tours, 30 April 2014, accessed 1 November 2014, http://www.itats.org/resilience-library/.

Introduction

> *Building on all of these qualities, leaders preparing for service at the strategic level must possess . . . an educational foundation that enables creative and critical thinking in an environment of complexity, ambiguity and uncertainty.*
> – General Martin E. Dempsey, "Building Critical Thinkers"

Every Air Force change of command acceptance speech sounds the same. There was no reason to expect anything different when Air University (AU), the command in change of all Air Force Professional Military Education (PME) and self-proclaimed "intellectual leadership center of the Air Force," received its new commander on November 10, 2014.[1] As Lieutenant General Steven Kwast accepted the command, there was nothing new about his remarks. He certainly did not omit the call for a new direction in the organization, which seems to be part of the standard script.[2] "We have a world in need of a generation of thinkers who can help us solve things in ways that the solutions in the past will not address," he said: "It is time, again, for the present generation of thinkers to innovate our way out of the problems of today and build this nation to a national power that helps us with ideological threats where information is used as a weapon."[3]

While the speech followed the regular protocol, the months that followed were marked by a whirlwind of activity in an attempt to transform Air Force PME. General Kwast began by meeting with AU students, faculty, and staff and expanding upon his earlier comments about innovation. He told the audience "our world has changed under our feet in ways we do not fully appreciate" and this shift has consequences for national security.[4] Therefore, AU has a responsibility to the Air Force and to the nation to undergo a project on the scale of the Air Corps Tactical School (ACTS), the predecessor to today's Air Force PME. In the years between the world wars, the students and cadre of ACTS foresaw a new security environment—an environment that required a new way of warfare and a new type of warrior to fight it.

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1. Lisa Warr, "Lt. Gen. Kwast assumes command of Air University," *Maxwell AFB Public Affairs* (Maxwell AFB, AL), Nov. 17, 2014, accessed 22 Jan 2015, http://www.maxwell.af.mil/news/story.asp?id=123431521.
2. Lt Col Jeffrey Smith offers a recipe for acceptance speeches when assuming command at the squadron level, including "lay out a broad idea of where you want to lead the unit" (Jeffry F. Smith, *Commanding an Air Force Squadron in the Twenty-First Century: A Practical Guide of Tips and Techniques for Today's Squadron Commander* (CreateSpace Independent Publishing Platform, 2012), 12).
3. Lisa Warr, "Kwast assumes command."
4. Lt General Kwast, "Commander's Call." Maxwell AFB. Speech.

Even though the warriors General Kwast called for will face their own new forms of warfare, the ingredients of innovation, at the personal level, are the same: cognitive skills, moral courage, and the ability to communicate.[5] Excellence in the cognitive domain includes comprehending information from multiple perspectives; analyzing and evaluating the ideas; integrating the ideas with others; and applying the ideas in creative and useful ways.[6] Intelligence can craft innovative ideas, but those ideas, by virtue of being different and novel, will often meet resistance. Thus, the second component is moral courage: following those ideas wherever they may lead, asking hard questions, and maintaining your own personal integrity despite the challenge of fighting for necessary changes. "History," General Kwast said, has "blessed the bold."[7] Finally, the third component, communication, is implicit in the first two. The innovator must be receptive to diverse perspectives and new domains of knowledge and new ways to stitch those domains together; she must share her ideas to evaluate and develop them collaboratively; and she must be ready to tell the story of her mature ideas eloquently and clearly, to audiences ranging from those inside the organization to the greater community she serves.

According to General Kwast, those who possess these abilities can be innovators and, furthermore, those innovators will be heroes. "Our future is going to require some heroes" he proclaimed, "and those heroes are going to come from the halls of this auditorium."[8]

He concluded by reiterating the urgent need for this breed of warriors: heroes with the cognitive skills, moral courage, and communicative abilities to innovate. For AU, the charge is how to craft a new educational strategy that *encourages* such innovation. Encouragement can imply either support or stimulation and, in this situation, both are necessary. In other words, PME must help *ennoble* the act of innovating so that it is valued appropriately by the organizational culture. PME must also *nurture* the personal skills necessary for innovating. The practical value of such skills will, in turn, further elevate the role of innovators.

Obviously, these tasks do not only apply to AU students. The challenge of creating an innovative educational approach necessarily requires innovation in the educational system itself.

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5. What follows is derived from General Kwast (All Call, 12 Nov 14), but the typology and terminology are my own.

6. This matches Bloom's Taxonomy, a hierarchy of learning skills: remembering, understanding, applying, analyzing, evaluating, and culminating in creating (Linda B. Nilson, *Teaching at Its Best: A Research-Based Resource for College Instructors*, 3rd edition (San Franciso, CA: Jossey-Bass, 2010), 21.

7. Kwast, "Commander's Call."

8. Kwast, "Commander's Call."

Therefore, the first task is to *nurture* the skills for innovating education and *ennoble* the role of the innovative educator. I address the *encouragement* of innovation in terms general enough to apply to those who shape the educational system and those shaped by the system.

Research Approach

General Kwast was the proximate catalyst for this project and I use his remarks as opening premises. First, the security environment is changing and so the military needs innovators. Second, PME has a role in encouraging innovation in its students. Third, encouragement includes cultivating applicable personal skills (cognition, courage, and communication). Fourth, encouragement also includes the promotion of innovation as a noble endeavor. Fifth, PME must first innovate itself. Although the argument is grounded in these assertions, support for all of them emerged in the course of my research.

My research approach was informed by the confluence of forces, already mentioned in the preface, which hinted at the potential for stories, narratives, and fiction in both education and strategy. Despite the growing sense that my biases were ill founded, the fact remains that deliberate instruction in fiction or artistic oration is rare at AU.[9] Perhaps this is for good reasons. Are there good reasons, however, for exploring this under utilized approach? To answer that question, my research examined narrative, stories (a type of narrative), and literature (a type of story).

Narratology. Narratology has specific technical definitions in fields such as linguistics and literary studies. The term is used here, however, to indicate the broad study of narration. What previously was considered a niche field is increasingly recognized as a central concept in the human experience. This growing attention, referred to as the narrative turn, is present across many disciplines: "literary, socio-anthropological, linguistic, historical, psychological, even computational."[10]

That is the judgment of one of the most widely cited authors on narratology, cognitive psychologist Jerome Bruner. Of his 15 books, the most significant for this project were *The Culture of Education*, *Making Stories: Law, Literature, Life,* and *Actual Minds, Possible Worlds*.

9. For examples of the rare exceptions, the SAASS curriculum includes H. G. Wells' *The War in the Air* and the ACSC resident program offers an elective on "The Air Force in fact, fiction, and film."

10. Jerome Bruner, *The Culture of Education* (Cambridge, Mass.: Harvard University Press, 1997), xiv.

In these works, he argues for the fundamental role of the narrative mode of thinking that he contrasts with the rationalistic mode.

For Bruner, these two modes are irreconcilable to each other. In contrast, Walter Fisher argues both modes follow the same fundamental principles. In his *Human Communication as Narration*, the professor of Communication Arts and Sciences argues narrative thinking and rationalistic thinking each follow the conventions of a narrative paradigm.[11] There is much potential confusion. In one sense, each type of thinking emphasizes a different set of rules depending upon the situation. The rationalistic mode prevails in the realm of the Apollonian by using the logic of reasons. On the other hand, the Dionysian relies more on the logic of the narrative mode, which Fisher distinguishes as the logic of *good* reasons. In another sense, however, both have narrative qualities, given Fisher's definition of narration as *any* symbolic communication with sequence and meaning.[12]

Another significant contribution is Mark Turner's *The Literary Mind: The Origins of Thought and Language*. Turner is a professor of cognitive science with advanced degrees in both mathematics and English language. Thus, his approach differs from Fisher, whose educational and professional background is in communication studies and rhetorical theory. Nevertheless, they both conclude that narratives are fundamental to human cognition. For example, Turner writes "the central issues for cognitive science are in fact the issues of the literary mind" and "narrative imagining, often thought of as literary and optional, appears instead to be inseparable from our evolutionary past and our necessary personal experience."[13]

To further illustrate his point, Turner invokes the analogy of vision. Vision is a continuous mental activity in which the visual field is constantly absorbing light, but our mind is only directed to images that catch our attention: the framework precedes the focus. Similarly, narrative thinking is constant, but unnoticed until our mental attention is directed to a particular manifestation of narrative thought: the story.[14]

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11. Fisher also refers to this as narrative rationality.

12. More specifically, narratives are (1) "symbolic interpretations of aspects of the world occurring in time and shaped by history, culture, and character" to (2) overlay order onto human experience and (3) hence become a potential "basis for decision or action." (Fisher, *Human Communication as Narration,* xiii, 63, xi-xii).

13. Mark Turner, *The Literary Mind: The Origins of Thought and Language*, Reprint edition (New York: Oxford University Press, 1998), 25.

14. Turner, *The Literary Mind*, 12-3.

Stories. Narrative and story are often used interchangeably. Even when distinguished, different scholars have different ways of defining the two terms. For some, a narrative is a "system of stories."[15] Sometimes organizations refer to a narrative as a broad theme, an organizing principle for smaller, subordinate stories. For others, a narrative is a story without end.[16] For this thesis, the adjective *narrative* describes the paradigmatic framework that humans intuitively use to interpret the world in terms of sequence and meaning.[17] Note that the interpretative function operates in two directions: first, from outside an agent inwards, as incoming data is translated into meaningful sequences; second, from the agent outwards, as information is transmitted symbolically to other agents. Hence, narrative thinking and narrative communication are two aspects of human agents as *homo narrans*.[18] Also, note that the product of these interpretative processes is a narrative (as a noun).

The minimal narrative account is a spatial event with a presumed significance, which may only be implied by the fact that the narrator perceived some value in expressing the information. For example, the statement "I walked home" is a narrative. What turns simple statements like this, or even expository descriptions, into stories is the presence of specific elements: "At a minimum, a 'story' (fictional or actual) involves an Agent who Acts to achieve a Goal in a recognizable Setting by the use of certain Means. What drives the story, what makes it worth telling, is Trouble: some misfit between Agents, Acts, Goals, Settings, and Means . . . The action then unfolds leading to a breach, a violation of legitimate expectancy. What follows is either a restitution of initial legitimacy or a revolutionary change of affairs with a new order of legitimacy. [Stories] (truth or fiction) end with a coda, restoring teller and listener to the here and now, usually with a hint of evaluation of what has transpired."[19]

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15. Steven R. Corman, "The Difference between Story and Narrative," Center for Strategic Communication (21 March 2013), accessed 5 January 2015, http://csc.asu.edu/2013/03/21/the-difference-between-story-and-narrative/.

16. John Hagel, "The Pull of Narrative—In Search of Persistent Context," *Edge Perspectives* (23 May 2011): http://edgeperspectives.typepad.com/edge_perspectives/2011/05/the-pull-of-narrative-in-search-of-persistent-context.html.

17. For clarity, direct quotes will be edited to replace *narrative* with *story* to maintain a consistent usage throughout the thesis. The opposite error occurs as well. For example, in the foreword to Fisher's work, Carroll Arnold writes "constructing, interpreting, and evaluating discourse as a 'story' remains our primary, innate, species-specific 'logic'" (ix). The logic is a narrative logic and stories are just one manifestation of narrative communication.

18. Fisher, *Human Communication as Narration*, 62.

19. Bruner, *Culture of Education*, 94-5. Bruner borrows liberally from Kenneth Burke's 1969 work, *A Grammar of Motives*, in which Burke labels the first five elements as the "story pentad."

Kendall Haven, West Point graduate, author, and professional storyteller, offers a similar definition of story: "A detailed, character-based narration of a character's struggles to overcome obstacles and reach an important goal" that is intended to impact the receiver.[20] His *Story Proof: The Science Behind the Startling Power of Story* reviews research from over 1300 practitioners (mostly educators) who employ storytelling, 350 texts, 70 articles, and 1500 studies from 15 various academic fields (including neural biology, developmental psychology, neural linguistics, education, organization theory, medicine, and anthropology). Haven, while seeking to understand the power of stories, reached the same conclusions about narrative thinking as Fisher and Bruner.[21] Stories are potent tools "to motivate, or to teach and communicate factual, conceptual, and tacit information" and "stories belong as the bedrock of management, leadership, education, outreach, and general communication efforts."[22]

Storytelling. The authors above address stories from a broad perspective in a way that is agnostic to content's veracity (i.e. fact or fiction) or its medium (i.e. oral or written). Other authors focus on the practice of storytelling. Although I focus on the use of stories in written form, a couple of key authors make two significant contributions. The first is Stephen Denning's *The Secret Language of Leadership: How Leaders Inspire Action Through Narrative* and the second is Annette Simmon's *The Story Factor*. The ideas of both contributed to the Narrative Intelligence model, outlined in chapter two. More importantly, however, each persuasively argues for the power of storytelling for leading organizational change.

A key premise of this thesis is the transfer value of studying written stories: fiction can nurture Narrative Intelligence and that capacity contributes to the employment of Narrative Intelligence in other mediums. To put it bluntly, reading and writing stories will make one better at telling stories and listening to stories.

Literature. The scholarship on literature is vast. There are, however, some individuals that are specifically interested in the power of written stories to shape our minds and our institutional cultures. Joshua Landy's *How to do Things with Fiction* catalogs a variety of uses before arguing for one central function. For Landy, the most important use of fiction is not to uncover a hidden meaning, or receive a piece of wisdom, but to provide a formative experience that is unique for each reader. Lisa Zunshine's *Why We Read Fiction: Theory of Mind and the Novel* delves into

20. Kendall Haven, *Story Proof: The Science Behind the Startling Power of Story* (Westport, Conn: Libraries Unlimited, 2007), 79.
21. Haven, *Story Proof*, 22.
22. Haven, *Story Proof*, viii.

one specific skill that literature exercises: the ability to project one's self into another's perspective. Landy and Zunshine share a common academic background as literary theorists, but their findings are increasingly supported by scientific studies. There is a cluster of researchers in Toronto, Canada including Keith Oatley (*Such Stuff as Dreams: The Psychology of Fiction*) and Raymond Mar (multiple journal articles). When able, their empirical studies are used to bolster the theoretical propositions in my argument.

One other scholar deserves mention. Joseph Campbell is a widely recognized expert in comparative mythology. He is particularly well known for his concept of the monomyth, a set of universal themes that describe the journey of a hero and the importance of this myth. Two of his works are relevant for this study: *The Hero with a Thousand Faces* and *The Power of Myth*.

Research Question and Hypothesis

General Kwast issued a charge to all units within Air University; a call to encourage heroic innovators. My research suggests the field of narratology holds the keys necessary to both ennoble the role of innovators and to cultivate the personal skills required for innovation. Within narratology, further research points to storytelling as a fruitful source of ideas to innovate education in AU. Examining the field of storytelling suggests that a subcategory of stories, literature, is an appropriate path to explore. Lastly, a particular type of literature, speculative fiction, became the focus of my research question due to the possibility that its use in OPME could contribute to encouraging innovation.

Hence, my research question became: can fiction in OPME curriculums encourage heroic innovators? My hypothesis, based on my initial research, affirmed the growing intuition that fiction could indeed do more than I previously believed. Unfortunately, there are no means to empirically test this hypothesis within the confines of this project. I could, however, seek to determine whether there is enough *theoretical support* for fiction in this role. If so, that would warrant a good reason for experimenting with fiction in AU. After incorporating fiction into the curriculum, empirical tests could be attempted, although it is debatable whether a Dionysian project like education is even susceptible to such Apollonian attempts at measurement.

The literature review certainly suggests that fiction could ennoble and cultivate innovation. Understanding the actual mechanism by which this occurs requires a thorough understanding of many different philosophical treatises and empirical studies. No one source provided an adequate theoretical framework, although Fisher's and Bruner's works came closest.

Hence, after analyzing all the resources above, I synthesized the ideas into a theory of Narrative Intelligence. The model relies heavily on Fisher and Bruner, essentially integrating the latter's narrative mode of thinking into the former's narrative-rational paradigm. This reformulation facilitates the application of their ideas (and the ideas of others) to PME's responsibility to encourage innovation.

The Narrative Intelligence model encapsulates two themes. The first element is an appreciation of the pervasiveness and power of narrative thinking. This thinking is present in stories and fiction, but it is not limited to them. The second component is the ability to employ narratives and stories as deliberate modes of thought and communication. The model is merely an idea, and ideas must be developed before they become innovations. Without the advantage of empirical tests, organizations must test the idea in simulations.[23] This study uses *Ender's Game* to (1) demonstrate how fiction in PME may be able to enhance Narrative Intelligence, and (2) how doing so can encourage heroic innovators.

Overview of Argument

This thesis comprises an argument for the power of stories, and so it is natural to employ the elements of story: "conflicts, characters, beginnings, middles, and ends."[24] Some characters have already been introduced and the conflict has been set: how to encourage heroic innovation. Chapter one begins in ancient Greece. It advances quickly to the modern era, the growing realization of what was lost with Plato's false dichotomy, and the intuition that a reunion of the Apollonian and the Dionysian may help resolve the story's dilemma. Chapter two provides the theoretical connections between a Dionysian world and the way humans think and communicate. A Theory of Narrative Intelligence synthesizes a wide range of works to explain why fiction is relevant for nurturing the skills required for innovation. Chapter three shows that the challenge of encouraging heroic innovation has particularly relevant antecedents in evolving conceptions of heroism: from the brutal close-in fighting of Homer's tales to the "knights of the air," launching missiles from a relatively safe range, to the current attempt to ennoble the innovator, completely separated from danger. Chapter four examines a fictional character as an archetypical hero and demonstrates how mythical heroism and innovation are linked. The chapter ends with specific ways *Ender's Game* can stimulate reflection and discussion on a number of issues related to

23. For more, see Rosen's *Winning the Next War* and Hughes' chapter on the evolution of large systems in Wiebe E. Bijker, Thomas Parke Hughes, and T. J. Pinch, eds., *The Social Construction of Technological Systems*.

24. Fisher, *Human Communication as Narration*, 24.

encouraging innovation. The conclusion briefly summarizes the project and offers an epilogue to foreshadow the fate of the thesis' hero.

Chapter 1

Why We Think We Don't Need Stories, But Really Do (Especially Today)

> *It was civilization itself which inflicted this wound upon modern man. Once the increase of empirical knowledge, and more exact modes of thought, made sharper divisions between the sciences inevitable, and once the increasingly complex machinery of State necessitated a more rigorous separation of ranks and occupations, then the inner unity of human nature was severed too, and a disastrous conflict set its harmonious powers at variance. The intuitive and the speculative understanding now withdrew in hostility to take up positions in their respective fields, whose frontiers they now began to guard with jealous mistrust; and with this confining of our activity to a particular sphere we have given ourselves a master within, who not infrequently ends by suppressing the rest of our potentialities. While in one a riotous imagination ravages the hard-won fruits of the intellect, in another the spirit of abstraction stifles the fire at which the heart should have warmed itself and the imagination been kindled.*
>
> – Friedrich Schiller, *On the Aesthetic Education of Man*

Instead of being *about* fiction, if this thesis *were* fiction, then the material in this chapter would form the prologue. A prologue establishes the background for the story about to be told. This story argues that fiction, by nurturing Narrative Intelligence, is one component of encouraging innovation. The more subtle argument is that incorporating fiction, or any facet of Narrative Intelligence, into PME would itself require an innovation in our military culture.

Explaining the roots of the prejudice against storytelling is one purpose of this prologue. Another purpose is to clarify the concept of paradigms. Both themes emerge from a historical anecdote that describes how a leader used the power of storytelling to offer a new way to fight and a new way to govern.

That leader enjoyed the advantage of a culture that held Apollonian and Dionysian images in creative tension. However, with his death, this balance and his innovative visions were both dismantled. Modern efforts to restore the dynamic balance between forces of order and forces of disorder have been given greater urgency by changes in the national security environment—changes that indicate the need for a new generation of strategic storytellers.

Prologue or "Before *Logos*"

Walter Fisher's *Human Communication as Narration* opens with this line: "In the beginning was the word, or more accurately, the *logos*. And in the beginning, '*logos'* meant

story, reason, rationale, conception, discourse, thought."[1] All forms of human expression were subsumed in this Greek word. After Plato, however, the Greeks—and the Western world that followed—divorced the rational from the poetic. The impacts have been profound. The scene of this tragedy is, in fact, the same historical period and place where tragedy was born as a dramatic form, ancient Greece.[2]

Homer's Heroes. This story starts with a storyteller, Homer. Biographical information on the purported author of *The Iliad* and *The Odyssey* is elusive, as is exact knowledge of when these poems were written. The epics are generally dated to the eighth century BCE. They possibly originated in oral histories, since the context for both stories, the Trojan War, occurred three to four centuries earlier, according to Greek legend.

Both works represent a nexus of warfare and stories. *The Iliad* is about the decade long battle between Greek city-states and Troy. *The Odyssey* begins with the end of that war and follows one of the heroes as he fights his way home through various challenges. Like all of the works attributed to Homer, approximately half of the poems' lines feature speeches or stories told by characters.[3] Additionally, the works themselves may have been designed to be heard rather than read.[4]

Homer's poems formed powerful images of heroic fighting.[5] Everett Dolman, quoting a line from Ferrill's *Origins of War*, describes the battles of that time as "groups of aristocratic champions facing each other in single combat . . . 'fluid, free-for-all encounters in which the great aristocrats of one state dueled with those of another.'"[6]

Whether they believed the veracity of the stories or not, "they certainly took heed of those myths in how they lived their lives and experienced their world."[7] Robert O'Connell, for

1. Walter R. Fisher, *Human Communication as Narration: Toward a Philosophy of Reason, Value, and Action* (Columbia, S.C.: University of South Carolina Press, 1989), 5.
2. Indeed, Greek tragedy is an extension of the ancient rites done in honor of Dionysus. Chapter two has more information on this.
3. Jasper Griffin, "The Speeches." *Cambridge Companion to Homer*, ed. Robert Fowler, (Cambridge: Cambridge University Press, 2004), 156.
4. Egbert J. Bakker, *Poetry in Speech: Orality and Homeric Discourse* (Ithaca: Cornell University Press, 1997), 31.
5. Donald Kagan, *Pericles Of Athens And The Birth Of Democracy* (New York: Free Press, 1998) 137-44.
6. Everett C. Dolman, *Astropolitik: Classical Geopolitics in the Space Age* (London: Routledge, 2001), 18.
7. Jerome Bruner, *Making Stories: Law, Literature, Life* (Cambridge: Harvard University Press, 2003), 98.

example, asserts that Homer's celebration of he "who fights at close quarters" informed expectations of later Greek warriors.[8]

The Iliad and *The Odyssey* were particularly influential in Athens. A central component of Athenian education was learning and reciting Homer's works. According to historian Donald Kagan, this provided practical lessons in how to live as an aristocrat, including how to fight and how to speak. The recitations themselves honed their rhetorical skills. Oratory prowess was a typical ambition for aristocrats in the democratic city. Since the decision-making authority lay with the assembly of citizens, persuasion served as a source of power.[9] Notably, Greek aristocrats had only recently begun to share political power with the *demos*.[10] The story now focuses on one of those aristocrats.

Pericles. Pericles experienced the same education as other Athenian aristocrats, including learning the Homeric poems. Yet, his education was uniquely advanced, thanks to tutors such as Anaxagoras of Clazomnae, who developed a theory of the physical world based on the ordering principles of the mind.[11] This became the philosophical foundation for Pericles' political metaphor: instead of a dictator controlling a mechanical world, the proper image was a prime mover that inspired individuals towards a common civic endeavor.[12] Additionally, according to Plutarch, Pericles also learned "a lofty spirit and an elevated mode of speech" from this education.[13] Such presence enables a leader to persuasively convey his vision and also gain the power to enact it.

Anaxagoras' methods anticipated the Sophists. *Sophos* initially referred to expertise in any skill or to wisdom in general. These "wise men" came to Athens to teach, bringing with them diverse perspectives and first-hand knowledge of other cultures.[14] Their experiences encouraged skepticism about the existence of objective truths. Thus, they focused on the practical skills their

8. Robert L. O'Connell, *Of Arms and Men: A History of War, Weapons, and Aggression* (New York: Oxford University Press, 1990) 47, 49; Homer, *The Iliad*, trans. Ian Johnston, 2nd edition (Arlington, Va: Richer Resources Publications, 2006) Book 5, Line 545.
9. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 21.
10. John Thorley, *Athenian Democracy*, 2nd edition (London: Routledge, 2004), 10.
11. Samuel E. Stumpf, *Philosophy: History and Problems*, 5th Edition (New York: McGraw-Hill, 1994), 23.
12. Thucydides, *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War* (New York: Free Press, 2008), 2.39.1.
13. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 22-5.
14. Stumpf, *Philosophy*, 30.

students needed to succeed in a democracy, such as speaking clearly and convincingly in public.[15] Sophistry eventually became associated with rhetoric, but the Sophists never thought of themselves as a coherent group with such a narrow focus.[16] Pericles, who knew these men and was close with the most influential of them, exemplified the civic virtues the Sophists professed to teach.[17] Eventually, both Pericles and the Sophists would draw damning criticism from opponents, but not before Pericles employed the same skills taught by the Sophists to influence Athens significantly.

What Pericles sought was not just a shift in political organization (or a method of warfare associated with it), but a change in Athenian thinking. Pericles sought to change the Athenian's *paradigm*. Before explaining what that innovation involved or how it was attempted, my argument necessitates a deviation to explain the concept of paradigms. To accomplish this task, non-linear narrative devices are employed to disrupt the sequence of the story (a technique also demonstrated in Homer's epics). The first is a flash forward in time. The second is reverse chronology, telling the stories backwards from that future point.

Paradigms, Then and Now

The Greeks had one definition for *paradigm*; today, there are many. I appropriate Gareth Morgan's framework to clarify the term, but modify it to fit more popular conventions.[18] There are no claims that this interpretation is the most accurate, but it does have the advantage of matching the original Greek usage of the term. It is, as the following will demonstrate, a paradigm of paradigms.

All Thinking is Metaphor. In his article, "Paradigms, Metaphors, and Puzzle Solving in Organization Theory," Morgan distinguishes between three different uses of *paradigm*.[19] Before examining these distinctions, it is useful to first imagine a continuum of mental operations. At one end of the spectrum are the mechanisms all humans use to process information—the realm of mental cartography, so to speak, and, on the other end, particular mental maps we use to navigate a problem.

15. Stumpf, *Philosophy*, 30-1.
16. Keith Crome, "Socrates and Sophistry," *Richmond Journal of Philosophy* 9 (Spring 2005): 1.
17. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 177; Stumpf, *Philosophy: History and Problems*, 31.
18. Gareth Morgan, "Paradigms, Metaphors, and Puzzle Solving in Organization Theory," *Administrative Science Quarterly* 25, No. 4 (December, 1980): 605-622.
19. Morgan, "Paradigms, Metaphors, and Puzzle Solving," 605.

Asserting that thinking is like the construction or use of maps demonstrates another literary device, metaphors. According to a popular dictionary, a metaphor is "a word or phrase for one thing that is used to refer to another thing in order to show or suggest that they are similar" or "an object, activity, or idea that is used as a symbol of something else."[20] In other words, it is a figure of speech that expresses a type of analogous reasoning.

An analogy is the transfer of information about one subject or event to another based on comparability. The implication is that if the two subjects are similar in some respects, it is rational to infer that other traits are shared in a comparable ratio. Likewise, examining where the two diverge may also yield insight. This rightfully suggests analogies, or any analogous expression such as metaphors or similes, are not merely literary devices. Indeed, Morgan and others use analogies in communication as analogies for how humans process information. In other words, the way incoming sensory data is handled is comparable to how a storyteller draws inferences from metaphors: humans interpret experience by comparing it to abstract frameworks.

Psychologists label such a framework a schema, from the Greek word for shape or plan. The theory is still maturing, but cognitive science widely accepts its central role in processing perceptions and memories.[21] For some researchers, this amounts to a theory-driven cognitive mode: incoming information is sorted according to the most appropriate mental pattern. For Morgan and others, the very inclination to conceptualize our experiences in metaphorical terms is *metatheoretical*. In other words, all thinking is metaphor.[22] Morgan expands on this idea:

> Human beings are constantly attempting to develop conceptions about the world . . . [and] they do so symbolically, attempting to make the world concrete by giving it form. Through language, science, art, and myth, for example, humans structure their world in meaningful ways. These attempts to objectify a reality embody subjective intentions in the meanings that underwrite the symbolic constructs that are used. Knowledge and understanding of the world are not given to human beings by external events; humans attempt to objectify the world through means of essentially subjective processes . . . all modes of symbolic understanding possess this quality. Words, names, concepts, ideas, facts, observations, etc., do not so much denote external 'things,' as conceptions of things activated in the mind by a selective and meaningful form of noticing the world, *which may be shared with others*. They are not to be seen as a

20. *Merriam-Webster*. "Metaphor," accessed 30 October 2014, http://www.merriam-webster.com/dictionary/metaphor.

21. Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965* (Princeton: Princeton University Press, 1992), 27.

22. George Lakoff and Mark Johnson, *Metaphors We Live By*, 2nd edition (Chicago: University of Chicago Press, 2003), 3.

> representation of a reality 'out there,' but as *tools for capturing and dealing with what is perceived* to be 'out there.'[23]

It is important to distinguish this fundamental *process* of human cognition from its *products*. At the far end of the continuum, people automatically and unconsciously engage in mental cartography to produce an overarching worldview or orientation.[24] Sometimes *paradigm* refers to this global perspective (e.g. Morgan). In contrast, the convention used herein refers to a relatively more restricted, more specialized, and potentially more deliberate interpretative framework. In other words, along the continuum, a paradigm is a mental map that is slightly less subjective and slightly less opaque. This allows it to function as a tool that can be shared with others. In this sense, paradigm is synonymous with metaphor, image, model, or exemplar. Schools of thought within a scientific field or within an organization's culture also represent this notion of paradigms, albeit with important distinctions that will be explained below.

Executive Awareness of Paradigms. Individuals are not always aware of the paradigms they employ for understanding the world and acting within it. First, the mental models exist on a scale wherein their conspicuousness is indirectly proportional to their scope. To quote Timothy Wilson, we are "strangers to ourselves" when it comes to how our unconscious minds create and adapt our individual worldviews at the extreme end of the continuum.[25] At the opposite end, we are easily cognizant of the formulaic approach invoked by solving mathematical equations or by navigating with a literal map. Morgan describes these activities as puzzle-solving. The wide expanse between those poles is the domain of paradigms, which vary in overtness.

Some factors contrive to obscure the content of our mental models or even the pervasiveness of using such models in interpreting and functioning in our world. First, it is our natural human inclination to reason in this fashion and our minds are chemically rewarded when our perceptions match our explanatory paradigms.[26] This process rewards an evolutionary

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23. Gareth Morgan, "Paradigms, Metaphors, and Puzzle Solving in Organization Theory," *Administrative Science Quarterly* 25, no. 4 (December 1, 1980): 609-10.

24. Ken Wilber, *Sex, Ecology, Spirituality: The Spirit of Evolution*, 2nd Edition (Boston: Shambhala, 2001), 125. Boyd defined orientation as the "images, views, or impressions of the world shaped by genetic heritage, cultural traditions, previous experiences, and unfolding circumstances" that "shapes the way we interact with the environment—hence orientation shapes the way we observe, the way we decide, the way we act." (Frans P. B. Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (Cheltenham: Routledge, 2006), 84.

25. Timothy D. Wilson, *Strangers to Ourselves: Discovering the Adaptive Unconscious* (Cambridge: Belknap Press, 2004).

26. David Brooks, *The Social Animal: The Hidden Sources of Love, Character, and Achievement*, Reprint edition (New York: Random House Trade Paperbacks, 2012), 207-8.

adaptation that enhanced the survivability of our ancestors. Second, those advantages existed regardless of one's conscious awareness of their functioning. Practical solutions matter more than explicit awareness of the problem solving process.

Morgan and other researchers are increasingly discovering that problem solving is a metaphorical process. Metaphors overlay an image against a subject (e.g. the notion of creating a map against the topic of how humans process information). This analogy can then serve as the basis for deliberate and detailed inquiry. Such investigation seeks to uncover exactly what the similarities and differences are between the subject and the image and then analyze the implications. In other words, Morgan advocates a rigorous application of what humans do intuitively, although with a greater degree of executive awareness.

That awareness can be summarized in three points. First, there must be an understanding that paradigmatic thinking is pervasive, including an awareness of one's own predominant paradigms. Second, the practitioner should recognize how his paradigms established the criteria for puzzle-solving approaches. Third, a practitioner should appreciate how other paradigms solve similar problems and willingly take advantage of those other metaphors.

These ideas form the theoretical basis for Morgan's approach to organizational theory. In his book, *Images of Organization*, he offers eight examples of organizational metaphors. His thesis is not that organizations are more accurately analyzed as machines or as organisms or political systems, but that each of these metaphors offers unique insights. "The ultimate challenge," he writes, "is not to be seduced by the power or attractiveness of a single metaphor—old or new—so much as to develop an ability to integrate the contributions of different points of view."[27] Many other thinkers have applied the concepts of paradigmatic thinking to *social* topics such as international relations or military theory. In a *scientific* endeavor, however, there is no rational case for Morgan's third recommendation.

Scientific Paradigms. In a scientific field, there should be only one paradigm and it would presumably be the most accurate and objective understanding of the subject under investigation. Yet, even in science, models compete on bases other than pure reason and the accumulation of facts. Thomas Kuhn explored this phenomenon in his book, *The Structure of Scientific Revolutions*, and concluded that sudden changes in scientific theories result from shifts in the

27. Morgan, *Images of Organization*, xii.

dominant paradigm. His work brought the term paradigm into widespread usage.[28] Unfortunately, the work lacked precision in the use of that term: by one scholar's count, Kuhn used the term in 21 different ways.[29] Additionally, Kuhn explicitly wrote about science, not social sciences. Later scholars had to offer clarifications, including additional terms to distinguish paradigms as a worldview from paradigms as specific metaphorical frameworks. The work that first introduced the information processing role of metaphors was actually Aristotle's *Rhetoric*.[30] Continuing in reverse, Aristotle was a pupil of Plato who himself used the original Greek term *paradeigma* in his works.[31]

Besides recovering the original meaning of paradigm, later commentators also had to justify the application of paradigms to other fields. One such extension of Kuhn's theory deserves mention here—the initiation of paradigm shifts.

Paradigm Shifts. Inaugurating a paradigm change is challenging. The existing metaphor already provides an efficient shortcut that yields sufficient answers with minimum cognitive effort.[32] It literally helps *make sense* of a disorderly world and humans naturally crave order. Therefore, paradigms persist, at least initially, despite anomalies and contradictions.[33] Transformational figures must share enough of the existing paradigm to be fluent with its perspectives and to communicate with its adherents. Literacy also confers legitimacy: those outside of the paradigm are easily dismissed as irrational. At the same time, one cannot be so immersed that creativity is hampered and anomalies are undetected or ignored.[34] Change requires a balance between an inside view, which simply facilitates groupthink, and an outside view, which challenges the status quo.[35] As Kuhn highlighted, this is why paradigm changes tend to be cultivated by those who are less indoctrinated in the existing system, due to age or experience, for

28. Thomas S. Kuhn, *The Structure of Scientific Revolutions: A Guide to Method*, 4th edition (University of Chicago Press, 2012), xix.
29. Gareth Morgan, "Paradigms, Metaphors, and Puzzle Solving in Organization Theory." *Administrative Science Quarterly* 25, no. 4 (December 1980): 606.
30. Kuhn, *The Structure of Scientific Revolutions*, xix; Morgan, *Images of Organization*, 367.
31. For example, in *Timaeus*, Plato used *paradeigma*, which means "pattern, example, sample," to describe the model or the pattern used to create the cosmos.
32. Khong, *Analogies at War*, 25.
33. Robert Jervis, *Perception and Misperception in International Politics* (Princeton: Princeton University Press, 1976): 117; Khong, *Analogies at War*, 39.
34. Morgan, *Images of Organization*, 3.
35. Morgan, *Images of Organization*, 247-248.

example.[36] For these reasons, Pericles was uniquely qualified to cultivate a paradigm shift in Athens.

Pericles embodied the right combination of cultural literacy, legitimacy, creativity, persuasive vision, and eloquence to influence the Athenian polis. First, although he received the standard Greek education, his tutors went even further to satisfy their inquisitive student, offering ideas outside the typical aristocratic curriculum.[37] Moreover, Pericles benefitted from their outside view, as well as their appreciation of intellectual diversity. Lastly, as he rose in public stature, his oratory skills allowed him to convey a new metaphor that incorporated both political and military dimensions. This new paradigm had to compete with strong prejudice against democracy and a well-established preference for aristocratic notions of governance and fighting.

Pericles, Persuasion, and the Peloponnesian War

To realize his vision for Athens, Pericles had to change the Homeric paradigm of aristocratic heroism. Homer's images of fighting decisive battles reinforced a tradition of warfare that glorified the individual, which also increased their political stature. In contrast, Pericles proposed a new paradigm, an image of collective good, enabled by equal opportunity in political affairs.[38] He argued that self-interest was better served within a democratic community and the war became an opportunity to reinforce this idea.[39] Fighting for such a superior state was the new path to achieving the "renown which never grows old . . . that noblest of shrines."[40] Dying in defense of a great state, a greatness credited to Pericles' own skillful leadership, would be the new key to obtaining a position in the community's "eternal memory."[41] "We are the objects of wonder today and will be in the future," Pericles proclaimed, "we have no need of a Homer to praise us."[42] To preserve Athenian power and to honor the memory of their ancestors, he encouraged his audience to "not shrink from the dangers of war."[43] He was speaking not about war in general, but about the Peloponnesian War.

36. Kuhn, *The Structure of Scientific Revolutions*, 90.
37. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 21.
38. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 137-44.
39. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 273.
40. Thucydides, *The Landmark Thucydides*, 2.43.2.
41. Thucydides, *The Landmark Thucydides*, 2.65.4-5.
42. Thucydides, *The Landmark Thucydides*, 2.41.4; Kagan, *Pericles Of Athens And The Birth Of Democracy*, 144.
43. Thucydides, *The Landmark Thucydides*, 2.36.1, 2.43.1-4.

In 431 BCE, Spartans reacted to the expansion of the Athenian empire.[44] The quotes from Pericles in the last paragraph were made after the war's first year. He used the traditional funeral oration as an opportunity to encourage commitment to the strategy he advocated at the onset of hostilities. In that earlier address, Pericles assured the Athenian assembly of victory *if* they would follow his plan. Instead of engaging Sparta in a land battle that would be to its advantage, Athenians should retreat behind the city walls. Instead of seeking a decisive engagement, Athens should depend upon its maritime power and financial capital to persevere until Sparta realized Athens could not be defeated. The Spartans would then relent to restoring the *status quo ante bellum*. He ended the speech by recalling the defeat of the Persian navy as an emotional appeal to bolster the people's confidence. Just as the glory of that victory was handed down to them, victory in this war would allow them to again "hand down our power to our posterity unimpaired."[45] It is a testament to his oratory skills that the Athenians accepted a strategy that no polis had ever attempted and that contradicted their paradigms regarding both the means and ends of warfare. That is, instead of Homeric images of a heroic and decisive battle, Pericles convinced the public to accept a defensive strategy for limited objectives based on restraint and patience.[46] Both would be tested in the war's first year.

As Pericles predicted, Sparta began the war by raiding Attica to draw Athens into battle. The reaction was also expected: enraged Athenians protested their army's inaction and made Pericles the "object of general indignation."[47] The following summer, Spartan raiding damaged even more agricultural assets, while a plague struck those inside the city. The dual hardships convinced Athenians to offer terms with Sparta, who rejected them.[48] When Pericles confronted the assembly again, he was aware of their hostilities towards him, but he refused to appease them. Instead, he asserted that they were the source of their own troubles. By faltering under pressure and placing their personal welfare above the community's security, they violated the honor of Athens.[49] Again, Pericles was able to persuade the assembly to continue his strategy and moreover, to exert "increased energy to the war."[50]

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44. Thucydides, *The Landmark Thucydides*, 1.23.5.
45. Thucydides, *The Landmark Thucydides,* 1.140-144.
46. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 230-1.
47. Thucydides, *The Landmark Thucydides*, 2.21.3.
48. Thucydides, *The Landmark Thucydides*, 2.59.
49. Thucydides, *The Landmark Thucydides*, 2.61.
50. Thucydides, *The Landmark Thucydides,* 2.65.2.

According to Thucydides, Athens eventually lost to Sparta and her allies because Athenians abandoned Pericles' plan.[51] Once Pericles fell victim to the plague in 427, no one could inspire the people adequately enough to uphold his vision or produce a better strategy.[52] The political turmoil and defeat that followed were proof of his unique abilities.

Alcibiades. Of all the leaders that emerged after Pericles' death, Alcibiades is a particularly useful example. Pericles became his guardian in his early childhood. Yet, despite this relationship, their characters diverged significantly and this contrast helps illuminate what happened to Pericles' vision. Alcibiades, who enjoyed the advantages of a large inheritance and physical attractiveness, was educated by some Sophists who had taken relativism and rhetoric to new levels. According to Donald Kagan, he was "willful, spoiled, unpredictable, and outrageous but his boyish antics won him admiration and public attention."[53] Thucydides described Alcibiades as overtly ambitious, selfish, and arrogant.[54] His history includes a speech in which Alcibiades cites his popularity and wealth as valid reasons to support his plan to expand the war into Sicily and for him to lead it.[55] Throughout Thucydides' story, it becomes increasingly obvious Alcibiades was willing to shift his allegiance and betray others to advance his own interests. This is especially evident after the disastrous Sicilian expedition that greatly contributed to Athens' defeat.

Plato. As the Athenian polis entered a period of decline after the war, the philosopher Plato was coming of age. The adventurism of the Sicilian campaign and the inability of Athens' political system to solve foreign or domestic issues left him deeply dissatisfied. In reaction to men like Alcibiades, he created a new paradigm that started with discrediting the Sophists. He mischaracterized them as a homogenous group of moral and intellectual relativists who were only interested in teaching persuasive rhetoric for profit. Such rhetorical skills could be used one day to convince the assembly to slaughter the entire male population of a rebellious state and then to convince them to reverse that decision the very next day.[56] Rhetoric was more like sorcery than reasonable discourse.

Whereas Pericles valued pluralistic dialogue amongst the masses as a key practice for a healthy democracy, only philosophers were qualified to have such discourse in Plato's image of

51. Thucydides, *The Landmark Thucydides*, 2.65.7.
52. Thucydides, *The Landmark Thucydides*, 2.65.6.
53. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 179-81.
54. Thucydides, *The Landmark Thucydides*, 6.15.
55. Thucydides, *The Landmark Thucydides*, 6.16-17.
56. Thucydides, *The Landmark Thucydides*, 3.36-49.

an ideal polis.[57] Unsurprisingly, his political philosophy departed from Pericles', who he claimed was one of "real authors of [Athens'] calamities."[58] For Plato, democratic equality did not release creative energies from the masses, but only legitimized chaotic and selfish pursuits.[59] Instead, states need a philosopher-king to achieve orderly rule, just as a ship needs a captain to stay on course (a fitting simile for a maritime power).

The proper exemplar for this ideal ruler was Plato's mentor, Socrates, and he communicated this through the allegory of the cave.[60] If an individual could escape the world of illusions (the implication was that Socrates had, but the Sophists never could), then the ability to discern objective truths made that person uniquely qualified to see what ordinary people could not. The philosopher-king should then craft a "noble lie" (i.e. a paradigm) to keep them content with illusions of reality.[61]

Plato's political philosophy, laid out in *The Republic*, was highly influential in Western traditions. His critique of democracy, for instance, persisted as a dominant image in Western philosophy through the Enlightenment.[62] Even America's founders were reluctant to use the term.[63] Democracy implied disorder—an ineffective means of governance. In contrast, a king ruled by reason.

Plato, in fact, became the most influential philosopher in Western culture.[64] Consider Alfred North Whitehead's illustrative quote: "The safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato."[65] In Havelock's conclusion to *Preface to Plato*, he writes, "Europe still lives in the shadow [of Socrates and Plato] using their language, accepting their dichotomies, and submitting to their discipline of the abstract."[66] Charting intellectual history through centuries invites oversimplification, but his influence is evident in two ways. The first, Plato's focus on reason, leads to the second, his indictment of storytelling.

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57. Lawrence Freedman, *Strategy: A History* (Oxford: Oxford University Press, 2013), 38-9.
58. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 268.
59. Stumpf, *Philosophy*, 75.
60. Morgan, *Images of Organization*, 207-8.
61. Freedman, *Strategy*, 40.
62. Kagan, *Pericles Of Athens And The Birth Of Democracy*, 268.
63. Charles Hill, *Grand Strategies: Literature, Statecraft, and World Order* (New Haven: Yale University Press, 2011), 147.
64. Stumpf, *Philosophy*, 46.
65. Alfred North Whitehead, *Process and Reality*, 2nd edition (New York: Free Press, 1979), 39.
66. Eric Havelock, *Preface to Plato* (Cambridge: Belknap Press, 1982), 305.

Platonic Ideals—Reason and Autonomy. The emphasis on individual rationality is evident in a variety of fields across Western civilization. First, consider a fundamental premise of Thomas Hobbes' political philosophy: humans are selfish individuals that only enter into social contracts as a rational strategy to serve their own needs for security and power.[67] Then there is economics, which developed precise scientific methods by presuming individuals are logical and self-interested. The emphasis on rational agency helped turn political and economic *philosophies* into social *sciences*, applying the paradigm of individual rationality to problems in their respective fields.[68]

Some historical accounts also operate from within this image of humanity. Christian Caryl's *Strange Rebels* is a just one example. The book revolves around five key events in 1979. He admits that the linkages between them may be coincidence but then he immediately asserts the presence of a pattern. The pattern reveals "they have much more in common than at first meets the eye."[69] In other words, he is uncovering order in the chaotic, dynamic interplay of historical events. He also sees individual agents, what he calls "grand personalities," as the central determinants of the plot.[70] Like his claim that a single man started the Arab Spring, his metaphor focuses on the individual at the expense of other factors. Thus, despite acknowledging the "tyranny of chance," he still asserts, "the decisions of these leaders decisively defined the world in which we live."[71] Uncertainty exists, according to Caryl, but decisions made by individuals are still the "decisive" factors.

Various social scientists admirably attempt to loosen the paradigm that emphasizes purely rational, autonomous agents. Those efforts, unfortunately, are often constrained by the nature of what Kuhn calls normal science, which requires scholars to employ the metaphors and assumptions condoned by their academic communities.[72] One example is Robert Axelrod, who demonstrated that a cooperative strategy could also succeed in Game Theory, instead of the

67. Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 2006), 4.

68. For example, political scientists often interpret international relations using the image of states as unitary and rational actors (Allison and Zelikow, *Essence of Decision*, 387, 393). Game Theory was invoked regularly in Cold War deterrence theory and is still used today to explain competitive strategies (see Everett Dolman's *Astropolitik* and *Pure Strategy* or the application of economic principles to military history in *Castle, Battles and Bombs*).

69. Christian Caryl, *Strange Rebels: 1979 and the Birth of the 21st Century*, Reprint edition (New York: Basic Books, 2014), xiii.

70. Caryl, *Strange Rebels*, xiii.

71 .Caryl, *Strange Rebels*, 358, xv.

72. Kuhn, *The Structure of Scientific Revolutions*, 4-5.

typical suboptimal strategy.[73] Yet, he noted that the "the list of potentially relevant factors that have been left out [of these formal abstractions] could be extended almost indefinitely."[74] This weakens the ability to extend his argument past the confined parameters of Game Theory models. Similarly, many theories have incorporated Hebert Simon's idea that rationality is bounded by subjective considerations and cognitive limitations, but within those boundaries he still emphasized linear, rational analysis.[75] Psychologists Daniel Khaneman and Dan Ariely go even further and demonstrate how often humans act irrationally.[76] Yet, their theories still assert that these logical inconsistencies occur in predictable ways that science can measure.

The Domain of Apollo

> *Operations research is the art of sub-optimizing, i.e. of solving some lower-level problems, and that difficulties increase and our special competence diminishes by an order of magnitude with every level of decision making we attempt to ascend . . . the proportion of the relevant reality which we can represent by any such model or models in studying, say, a major foreign-policy decisions, appears to be almost trivial.*
>
> – Charles Hitch, *Head of Economics Division of RAND*

There is a metaphor that encompasses all of these ideas about the proper approach to human knowledge and activity; an image that views Plato and his intellectual descendants as adherents to the same paradigm; an image that is itself inspired by a Greek god: the Apollonian.

The Apollonian force is "measured, balanced, rational, imbued with reason and self-restraint."[77] It invokes Plato's concept of forms, which the philosopher seeks to grasp: "those changeless, eternal, and nonmaterial essences of patterns of which the actual visible objects we see are only poor copies."[78] Uncovering those immortal principles is an endeavor for an individual mind to undertake, and not necessarily achievable for those poor souls stuck inside the cave of illusions. Like the image of Socrates escaping the shadows, the Apollonian model pursues ideas abstracted from context and knowledge abstracted from values. The search is for universals, not particulars; explanations, not observations. The paradigm presumes a complicated

73. Axelrod, *The Evolution of Cooperation*, 20-1.
74. Axelrod, *The Evolution of Cooperation*, 19.
75. Graham Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, 2nd edition (New York: Pearson, 1999), 20; Morgan, *Images of Organization*, 76-8.
76. Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2013); Dan Ariely, *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (New York: Harper Perennial, 2010).
77. Nassim Nicholas Taleb, *Antifragile: Things That Gain from Disorder*, Reprint edition (New York: Random House Trade Paperbacks, 2014), 255.
78. Stumpf, *Philosophy*, 58-9.

object or process or concept can be broken down into its constituent parts. Studying the individual parts, and the causal relationships between them, reveals the whole. Over time, the story of reason over passion, control over chaos, became a story of science prevailing over intuition, scientific methodology over myth, and purposefulness over playfulness. Order and objectivity reign supreme in the Apollonian perspective.

The presumption of linear, predictable forces has generated amazing technologies and scientific discoveries. For example, in World War II, operations research improved everything from submarine search patterns to bombing tactics. Linearity also validates forecasting through the extrapolation of known trends, leading some to conceive of the universe as clockwork, strictly determined by mathematical laws.[79] Lastly, the Apollonian gave birth to the social sciences as well as management theories based on standardization, command, and control. Both value mechanical, quantitative approaches to problem solving.[80]

If reason could uncover so much and usher in so much progress, it must be because humans themselves are most productive when emotion and passion do not cloud their ability to think rationally and to perceive the world objectively. This is the paradigm of Plato, but it is important to note that qualification: it is still only a paradigm. It is only one paradigm and, like all paradigms, it is partial: incomplete and biased. It certainly has been a useful paradigm, however. Its utility, in fact, has not necessarily occurred in spite of its inaccuracies, but possibly because of them.

Metaphorical Reasoning

> *All perception of truth is the detection of an analogy we reason from our hands to our head.*
>
> – Henry David Thoreau, *Walden*

Morgan argues that the creative potential of metaphorical reasoning is greatest when the image and the subject are neither completely separate, nor nearly identical. The former produces only absurd analogies. The latter denies the insights that come with applying the perspective of

79. "On Laplace's understanding of reality, the operation of the universe, down to the most minute details and the smallest particles, is strictly determined by quantitative, predictive, mathematical laws. The world is quite literally a giant clockwork" (Watts, "Clausewitzian Friction and Future War," 69-70).

80. Brooks, *The Social Animal*, 223-8; T. Irene Sanders, *Strategic Thinking and the New Science: Planning in the Midst of Chaos Complexity and Change* (New York: Free Press, 1998), 146-50. A comparison to other civilizations points to the notion that this is not an inherent in human nature. In other words, other worldviews exist that emphasize "context, relationships, harmony, paradox, interdependence, and radiating influences" (Brooks, *The Social Animal,* 141).

one subject to another. The right balance, and the "most powerful use of metaphor," arises when "differences between the two phenomena are perceived to be significant but not total . . . [allowing] a form of creative expression that relies upon constructive falsehood as a means of liberating the imagination."[81] Others refer to this divergence between our mental map and actual terrain as a creative tension, and cite it as a source of innovative ideas or even the impetus behind human evolution.[82] Thus, an executive approach to paradigms accepts each image as a partial truth, or what Alfred North Whitehead called a "useful fiction."[83]

In fact, this caricature of the Platonic paradigm is itself such a fiction. It is obviously a broad generalization that oversimplifies a strain of Western culture. Yet, like any good story, it has a sufficient degree of plausibility, or verisimilitude. This allows an audience to provisionally accept the perspective (at least until the story ends). It could, according to Morgan's theory, serve as the basis to investigate how well this model matches reality. Instead, for the purpose of this argument, it will be contrasted with a competing metaphor, the Dionysian.

Apollo and Storytelling.

> *Cast all else unto the flames, it is naught but sophistry and illusion.*
> – David Hume, *An Enquiry Concerning Human Understanding*

The very notion of entertaining a false analogy to nurture greater understanding is anathema to the Apollonian mindset: a useful fiction is a paradox, not a tool. Indeed, Plato denounced poetry and rhetoric as *harmful* fictions. According to Eric Havelock, roughly half of *The Republic* is devoted to disparaging the art of storytelling, whether in the form of poetry or rhetoric. It is, in fact, the component of the work Plato is most satisfied with: "Of the many excellences which I perceive in the order of our State, there is none which upon reflection pleases me better than the rule about poetry."[84] Storytelling "awakens and nourishes and strengthens the feelings and

81. Morgan, "Paradigms, Metaphors, and Puzzle Solving in Organization Theory," 611.

82. Peter M. Senge, *The Fifth Discipline: The Art & Practice of the Learning Organization* (New York: Doubleday Business, 1994), 142; Marty Neumeier, *The Designful Company: How to Build a Culture of Nonstop Innovation* (Berkeley: New Riders, 2008), 40; Osinga, *Science, Strategy and War,* 103. Additionally, Boyd offers "a paradigm for survival and growth:" "Since survival and growth are directly connected with the uncertain, ever-changing, unpredictable world of winning and losing, we will exploit this whirling (conceptual) spiral of orientation, mismatches, analyses/synthesis, reorientation, mismatches, analyses/synthesis . . . so that we can comprehend, cope with, and shape, as well as be shaped by that world and the novelty that arises out of it" (QI, Osinga, *Science, Strategy and War*, 64).

83. Paul Bate, *Strategies for Cultural Change* (Boston: Butterworth-Heinemann, 1994), 269.

84. Plato, *The Republic*, trans. Benjamin Jowett, 10.595a.

impairs the reason."[85] Reason is what future leaders need to uncover the true nature of reality; to escape the cave of illusions. Stories, on the other hand, are simply illusions about the illusions, shadows of shadows, that cripple the mind. Admittedly, Plato offers to entertain an argument in defense of stories and concedes there is much charm in stories. Havelock argues in his *Preface to Plato*, however, that the burden of proof is so high and the charges are so damning that to think that his offer "amounts to a recantation profoundly mistakes his intention."[86] Plato could not accept a form of communication based on persuasion and particularities.

Before Plato, *logos* included stories. After Plato, *logos* only meant logic. What was stripped away was *mythos*, the domain of the poetic and the rhetorical, which then became "relegated to a secondary or negative status."[87] Although Aristotle differed from his teacher by allowing for a wider range of human communications, his distinctions placed storytelling on the periphery. According to Fisher, this "enabled later, and often lesser, thinkers to insist that their mode of discourse was superior to others and to call on [Aristotle] for support."[88] Plato's other intellectual progeny were authentically hostile to storytelling, including Sir Francis Bacon, Rene Descartes, and John Locke.[89] The expansion of the Apollonian paradigm only served to further diminish the stature of stories, so much so that it can now serve as a synonym for *lie*.

Apollo's Anomalies, Part I. Opposition to Plato's paradigm existed even in his own time and has continued ever since. At times, hostility towards the preeminence of reason produced a coherent movement, such as Romanticism. Some authors sense that, over the last century, new conceptions of science and humanity are again converging towards a new paradigm.

One of the key components of this nascent paradigm is the appreciation of paradigmatic thinking. A key contribution to this growing executive awareness was Kuhn's work. While studying the history of science, he detected a cyclical pattern of change. His conclusions challenged the presumption that scientific advancements transpire only through a linear accumulation of facts and theories. Such normal science does occur, but the questions it seeks to answer, and the mechanisms it employs to get those answers, are both provided by a dominant paradigm.[90] Because all paradigms are partial, some aspects of the field under investigation

85. Plato, *The Republic*, trans. Benjamin Jowett, 10.605b-c.
86. Havelock, *Preface to Plato*, 4-5.
87. Fisher, *Human Communication as Narration*, 5.
88. Fisher, *Human Communication as Narration*, 7. Indeed, a close reading of Aristotle's *Poetics* demonstrates that the author was offering a corrective to Plato's *The Republic*.
89. Fisher, *Human Communication as Narration*, 8-10.
90. Kuhn, *The Structure of Scientific Revolutions*, xi-5.

cannot be explained and are, in fact, not even considered legitimate puzzle solving activities. The rise of a new paradigm is explained, in part, by being able to account for a wider range of phenomena. According to Kuhn, however, this is only a partial explanation for how new ideas arise and gain popularity.

The rejection of the old paradigm does not necessarily occur deliberately. Instead, it is often through a "sudden and unstructured event" like a "flash of intuition."[91] In its embryonic stage, the new paradigm is often unable to compete with existing conventions. Instead, it appeals to more subjective qualities, such as an improved aesthetics.[92] The decision to adopt a new paradigm, which has not yet established the same level of cumulative evidence, is a decision that "can only be made on faith."[93] The choice between two incompatible paradigms often hinges on what Kuhn later called a mature sensibility that holds rational and non-rational factors together in productive balance (what others would call creative tension).[94]

Kuhn offers several examples of scientific paradigm shifts, such as the shift from an Earth-centric Solar System to a heliocentric model. He does not, however, address a variety of scientific theories emerging around the same time of his writings. These new approaches, such as Chaos Theory and Complexity Theory, directly challenge Apollonian assumptions of linearity and mechanical determinism. New images emerged from other fields as well, such as biology, sociology, and psychology. These approaches sought a new framework to account for a growing list of anomalies: the fundamentally social nature of humanity, the central role of emotions and values in cognition, the inability to understand a whole by isolating its components, the futility of master plans, the realization that *homo economicus* is psychopathic, and the censure of a fundamental mode of human communication: storytelling.

Dionysius Enters Stage Right

> *It makes me so happy. To be at the beginning again, knowing almost nothing . . . The ordinary-sized stuff which is our lives, the things people write poetry about—clouds—daffodils—waterfalls—what happens in a cup of coffee when the cream goes in—these things are full of mystery, as mysterious to us as the heavens were to the Greeks . . . It's the best possible time of being alive, when almost everything you thought you knew is wrong.*
>
> – Tom Stoppard, *Arcadia*

91. Kuhn, *The Structure of Scientific Revolutions*, 122.
92. Kuhn, *The Structure of Scientific Revolutions*, 154-5.
93. Kuhn, *The Structure of Scientific Revolutions*, 157.
94. Marc Trachtenberg, *The Craft of International History: A Guide to Method* (Princeton University Press, 2009), 21-2.

A number of writers, representing a diverse range of disciplines, are contributing to this new paradigm (see Appendix A). The Dionysian label is borrowed from one of them, Nassim Taleb, who describes this force as: "visceral, wild, untamed, hard to understand, emerging from the inner layers of our selves;" the realm of uncertainty, variability, chaos, volatility, randomness, and error that values the "rich texture of empiricism" and the opportunity to "gain from disorder."[95] Sanders describes the new paradigm as a shift from a deterministic universe of atomistic agents to a dynamic world of inter-subjectivity, from rigid hierarchies to adaptive networks, from reductionism to synergism, from rational and discrete planning to reflective practice and emergent opportunities.[96] In describing the developments that influenced John Boyd's work, Frans Osinga summarizes keywords of the emerging worldview: holism, mutual causality, indeterminism, adaptive self-organization, postmodern, novelties, and probabilities.[97] As early as 1932, one author remarked, "All the notions we thought solid, all the values of civilized life, all that made for stability in international regulations, all that made for regularity in the economy . . . in a word, all that tended happily to limit the uncertainty of the morrow . . . all this seems badly compromised. I have consulted all the augurs I could find, of every species, and I have heard only vague words, contradictory prophecies, curiously feeble assurances. Never has humanity combined so much power with so much disorder, so much anxiety with so many playthings, so much knowledge with so much uncertainty."[98]

Additionally, the Dionysian metaphor subsumes the notion of a wicked dilemma, a term coined by Horst Rittel and Melvin Webber in their 1973 article, "Dilemmas in a General Theory of Planning."[99] That article describes the pervasive difficulties of any social dilemma: every problem is interdependent and unique; the approach depends on the how the problem is defined; there is neither consensus on the definition nor objective measures of progress; no solution is final; and every attempt to solve the problem further alters the context.[100] Lastly, the American defense establishment is increasingly explicit about the Dionysian nature of modern warfare.

95 .Taleb, *Antifragile*, 255, 13, 256.
96. Sanders, *Strategic Thinking and the New Science*, 146-50.
97. Osinga, *Science, Strategy and War*, 88.
98. Paul Valery, quoted in Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World*, Reprint edition (New York: Currency Doubleday, 1996), 1.
99. Horst W. J. Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4 (1973): 155-169.
100. Rittel and Webber, "Dilemmas in a General Theory of Planning," 155-169.

Consider the acronym VUCA (volatile, uncertain, complex, and ambiguous), the focus on the human domain, and the use of the wicked concept in official documents.[101]

Dionysian Innovation. In *Winning the Next War*, Stephen Rosen analyzes examples of military innovation. The most successful attempts do not begin with defeat or surplus budgets or civilian intervention, but rather with a new paradigm. The paradigm is not an image of the future enemy, but of opportunities in the emerging security environment.[102] For example, over the first half of the twentieth century, the US Marine Corps reinvented itself as an amphibious warfare organization. Catalysts for the transformation included geopolitical changes (which made war in the Pacific likely) and technological changes (which necessitated seizing islands for advanced naval bases).[103] Transformational leaders in the organization recognized the evolving context and initiated innovations that contributed to victory in World War II.

The growing appreciation of the Dionysian metaphor marks a similar opportunity. While Plato sought to reduce disorder—a task that looks increasingly inadequate, at least for projects that really matter—the new paradigm celebrates it. Since complexity and wickedness form the context for all actors in the social environments, success comes to those who accept, rather than deny, the relevance of the Dionysian image. The importance of accepting the wickedness of human endeavors is especially important in the security environment, which also invokes the conventional use of the term. In other words, the national security environment is doubly wicked: it is both disorderly and dangerous.

Doubly "Wicked."

> *Killing is the precondition of all living whatsoever: life lives on life . . . plainly and simply: it has been the nations, tribes, and peoples bred to mythologies of war that have survived to communicate their life-supporting mythic lore to descendants.*
>
> – Joseph Campbell, *Myths to Live By*

101 .For example, consider the following Army publications *Institutionalizing the Human Domain* (http://www.tradoc.army.mil/stlp/docs/Pubs/140325%20Institutionalizing%20Human%20Domain.pdf), *Strategic Leadership Primer* (http://www.au.af.mil/au/awc/awcgate/army-usawc/sprimer.pdf) and *Commander's Appreciation and Campaign Design* (http://www.tradoc.army.mil/tpubs/pams/p525-5-500.pdf).

102. Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca: Cornell University Press, 1994), 8-9, 57.

103. Rosen, *Winning the Next War*, 64-5.

Thomas Hobbes asserted the impossibility of escaping physical struggle.[104] That "life is conflict" contributes to the "unity to all strategic experience" and insinuates that the possibility for war always exists.[105] In fact, every mainstream theory of international relations accepts the use of force, even if only for defense.[106]

The *role* of force remains ever present, even if the actual *use* of force were declining. Great powers, those states with a recognized responsibility in "determining issues that affect the peace and security of the international system," earn this position through advantages in military power.[107] When a nation's power is converted into credible authority, typically through victory in war, that nation earns the right to shape and enforce the international order.[108] For example, the United States established the current world order immediately after World War II.[109] Since then, its prestige, the "credibility of a state's power and its willingness to deter or compel other states," has maintained that order.[110]

It is the particular nature of that order that has decreased the use of force, at least between states. In his book, *After Victory*, John Ikenberry describes it as a "constitutional" world order in which states accept formalized procedures that bracket acceptable behavior and establish tighter international linkages.[111] Examples include treaties, dispute mediations, shared organizational processes, and rules restricting the initiation and conduct of war.[112] When such restrictions on the use of force are regularly observed, those rules gain the authority of tradition and become further ingrained into the world order.[113] Those very conventions, however, have created vulnerabilities for nation-states. At the same time, other developments are empowering new actors to exploit those weaknesses.

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104. Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature*, Reprint edition (New York: Penguin Books, 2003), 318.

105. Osinga, *Science, Strategy and War*, 142; Colin S. Gray, *Modern Strategy* (New York: Oxford University Press, 1999), 8.

106. Terry Nardin and David Mapel, eds., *Traditions of International Ethics* (Cambridge: Cambridge University Press, 1992), 299.

107. Hedley Bull, *The Anarchical Society: A Study of Order in World Politics*, 4th edition (New York, NY: Columbia University Press, 2012), 196; John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: W.W. Norton & Co, 2014), 5.

108. Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981), 31-2.

109. Ikenberry, *After Victory*, 163-6.

110. Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, 1st Princeton Classic ed., (Princeton: Princeton University Press, 2005), 45-6.

111. Ikenberry, *After Victory*, 4, 258.

112. Ikenberry, *After Victory*, 38, 65-7.

113. Nardin and Mapel, *Traditions of International Ethics*, 6.

The modern constitutional order imposes stringent criteria for the initiation and conduct of conflict. However, this order is a structure made by, and for, nation-states. Many non-state actors, however, exercise influence in the security environment. Examples include privatized security, paramilitary groups, criminal networks, terrorist organizations, and nongovernmental agencies.[114] International conventions may have little to no purchase on these actors, since, by definition, *international* norms arise *between nations.* Thus, these groups are anomalies in the Westphalian paradigm.[115]

Globalization is making the situation worse for nation-states, eroding their control over the movement of money, material, people, and ideas. At the same time, the revolution in communication technologies facilitates the proliferation of radical ideologies and weakens the state's claim on its inhabitants' identity. Thus, while modern nations still enjoy a monopoly on the high end of the warfare spectrum (moderated by institutional restraints), globalization is increasing the ability of non-state actors to exert power on the low end.

The Spectrum of Politics.

> *In the end, the best story wins. Not the right story, not even the most frequently told story, but the story that means the most to the greatest number of people—the one that is remembered.*
>
> – Annette Simmons, *The Story Factor*

> *The empires of the future are the empires of the mind.*
>
> – Winston Churchill, 1943 speech to Harvard University

This spectrum of political activity is a useful image for explaining the shift in the security environment and why storytelling matters to security professionals. Politics, in its most generic sense, is a contest for—and with—power and persuasion. Any person or group can engage in politics, but this section adopts the viewpoint of a nation-state. When a state decides to act against another political actor, the objective may be to exterminate the other completely or to change their behavior. There are two options for changing behavior. The first is through control: restricting the target's available actions or coercing them to alter their decision calculus. Since this involves the use, or the threatened use, of force, it is the realm of armed politics.[116] The other

114. Mary Kaldor, *New and Old Wars: Organized Violence in a Global Era*, 3rd edition (Stanford, CA: Stanford University Press, 2012), 5.

115. Of course, there is no guarantee nation-states themselves will conform to international conventions.

116. Emile Simpson, *War From the Ground Up: Twenty-First Century Combat as Politics* (Oxford: Oxford University Press, 2012), 11.

option for altering the behavior of another political actor is persuasion. Affecting other's beliefs and values—convincing them, instead of controlling them—is the realm of unarmed politics.

This establishes a spectrum of political actions: convincing—controlling—killing. Conventional war is merely a category that draws an artificial boundary around the higher end of the spectrum; closer to killing than to convincing. It should not be considered conventional in the sense that it is normal, but rather a category defined by convention. Agreements between states established conventions for fighting among them. Rules, such as the requirement to declare war, convey a sense of war as a discrete event, distinct from peace, occurring between two sides. The convention also imparts meaning on the results: military victory is *decisive* in the sense that it does more than just set the conditions for a political solution (all forms of warfare have done so in the past). Instead, victory on the battlefield represents political victory. Historically, states agree to the decision and their participation in this particular form of armed politics is tacit acceptance of the convention.

Fighting that occurs outside the convention can be subversive to the international order.[117] Hence, warfare that does not comport with the rules of the game is derided as small or irregular. In fact, labeling forces as regular is a reflection of their *regulation* by the convention (e.g., soldiers should be in an identifiable uniform) and should not be considered regular in a normative sense. Irregular warfare is actually more common than conventional fights in which regular forces decide battlefield victories that translate straightforwardly into political objectives. States, by virtue of their power, can generally monopolize this high end of the warfare spectrum. Yet, they too have engaged in irregular warfare as part of conventional wars (e.g. T.E. Lawrence's campaign during World War I). They do so because prevailing in the political contest requires a strategy that takes advantage of all the types of warfare that are available to the state; *war* should be approached with a consideration of all possible forms of *warfare*.[118]

War always spreads outside of the convention of armed politics because there have always been other types of political actors seeking an advantage. These actors lack the power and

117. Dr. Harold Winton pointed out to me that it could also uphold the international order by giving states indirect means, short of conventional war, with which to resolve disputes.

118. Consider Lawrence Freedman's condense description of strategy: "So the realm of strategy is one of bargaining and persuasion as well as threats and pressure, psychological as well as physical effects, and words as well as deeds. This is why strategy is the central political art. It is about getting more out of a situation than the starting balance of power would suggest. It is the art of creating power" (Lawrence Freedman, *Strategy: A History* (Oxford: Oxford University Press, 2013), xii).

prestige of the state, and thus gravitate towards the lower end of the spectrum. Hence, insurgents and terrorists often start with efforts to convince their target audiences, even if they aim to develop a more conventional force to control or kill in the future. Thus, Mao prioritized the political education of Chinese peasants and Lawrence hailed the printing press as one of the best weapons for a commander. Future belligerents, including Che Guevara, Regis Debray, and Seyyid Qutb, took advantage of the written word to spread their own messages. The modern revolution in information technologies has only increased the ability of non-state actors to reach their audiences.[119]

In the conventional war paradigm, the central strategic audience is the adversary's decision makers. Military victory could translate into a political decision and it could do so with less consideration of the opponent's populace. Globalization, however, has extended the strategic domain down towards the population and given the people the means to exert more pressure, which is exactly what non-state groups have focused on.[120] Even the individual has greater "visibility, leverage, and potential power and influence."[121] Additionally, populations are increasingly fractured: more people in more places with more diverse interests and more access to information than ever before. Thus, the spectrum of political means must expand to accommodate what Audrey Cronin calls the strategic triad of actor, target, and audience(s).[122] In other words, a state's selection of options along the convince—control—kill continuum must consider how those actions will affect other audiences, and which of those audiences matter. This new security environment calls for a combination of soft and hard power sometimes referred to as *smart* power.[123] That is, when the objective is exterminating the opponent or restricting their

119. The confluence of cyberspace and international politics, Nazli Choucri writes, "calls into question the fundamentals of traditional politics among nations based on competition for territory, trade, and military prowess, replacing these with new parameters, such as education, skills, knowledge management, and various manifestations of 'brain power'" (Nazli Choucri, *Cyberpolitics in International Relations* (Cambridge: MIT Press, 2012), 10).

120. Simpson, *War From the Ground Up*, 93.

121. Choucri, *Cyberpolitics in International Relations*, 226.

122. Audrey Kurth Cronin, *How Terrorism Ends: Understanding the Decline and Demise of Terrorist Campaigns* (Princeton: Princeton University Press, 2011), 7.

123. The combination of hard power and soft power strategies is defined by the Center for Strategic and International Studies as Smart power means developing an integrated strategy, resource base, and tool kit to achieve American objectives, drawing on both hard and soft power. It is an approach that underscores the necessity of a strong military, but also invests heavily in alliances, partnerships, and institutions at all levels to expand American influence and establish the legitimacy of American action. Providing for the global good is central to this effort because it helps America reconcile its overwhelming power with the rest of the world's interests and

target's options, the appropriate mechanism is still "a man on the scene with a gun."[124] When the objective is to change another actor's decision calculus, then administrative binds (along with a reputation for enforcement), is the right political tool. However, when the goal is to persuade, *which is what the security environment increasingly demands*, the best tool is one we have disparaged since the days of Plato: storytelling.

Conclusion

This chapter started with Homer and Pericles, jumped to the twentieth century to trace the theory of paradigms from modern interpretations back to its original usage, picked up the story again with the Peloponnesian War, and then traced some of the philosophical reverberations across a broad arc of Western history. Following chapters build upon the ideas introduced in this chapter: that heroism can be redefined, that strategic decisions have narrative qualities, and that military institutions must embrace complexity to prevail in a world that is wicked once over.

Three central themes emerged from this sketch. First, the Western canon has often cast the poet and storyteller as antagonists to the philosopher or *homo economicus.* The origin of that prejudice can be traced back to the very origins of Western civilization. Second, our minds naturally use metaphorical thinking and there are advantages to employing this instinct in a deliberate manner. Through an executive perspective that nimbly adopts diverse perspectives, one can mitigate the inherent partiality of any one image and achieve a more textured, holistic understanding. Thus, the Dionysian was offered as a counterweight to the Apollonian.

Finally, in another juxtaposition, unarmed politics, with its focus on persuasion, was offered as a counterweight to *conventional* war, with its focus on power and control. With this, too, the mythological metaphors provide key insights. Death and destruction are calculable, tangible forces of the Apollonian domain. When the threat of death and destruction impinge upon human agency, that imposition of control allows Apollonian causality to approximate human behavior: *might makes right*, as the Athenians argued on the island of Melos.[125] The coin of the Dionysian realm, however, is persuasion: *the best story wins*. To compete across the entire spectrum of the political contest, one must seek advantages in power, prestige, *and* persuasion.

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values" ("CSIS Commission on Smart Power: A smarter, more secure," America accessed April 28, 2015, http://csis.org/files/media/csis/pubs/071106_csissmartpowerreport.pdf).

124. J. C. Wylie, *Military Strategy: A General Theory of Power Control* (Annapolis: Naval Institute Press, 1989), 72.

125. The full quote from Thucydides' portrayal of the Melian dialogue is, "right, as the world goes, is only in question between equals in power, while the strong do what they can and the weak suffer what they must" (Thucydides, *The Landmark Thucydides*, 5.89).

The United States does the first two well, but often falls short on the final one. The next chapter suggests how stories can help us turn the page and later chapters explain how this can ultimately enhance our national security.

Chapter 2

Narrative Intelligence

The purpose of this chapter is to outline a theory of Narrative Intelligence. The theory links the Apollonian and the Dionysian and points to how the military could—and how it should—become more adept at the non-lethal end of the political spectrum. The contest for and with power and persuasion is not just about one's violent enemies, of course. Internal influence is also a valid line of effort in order to accomplish certain objectives such as encouraging innovation. Admittedly, getting to innovation is a long journey through this chapter and the destination may not arrive with as much clarity as an Apollonian reader craves. *Then again, what successful story ever does?*

A critical note is warranted: the theory is not complete. Only those elements that pertain to innovation are included, and even that list is not necessarily exhaustive. It does, however, provide enough circumstantial evidence for including fiction in PME on a trial basis. This change would itself require an innovation—an innovation in which Narrative Intelligence should also play a role, as chapter three will describe.

Theater of Life

Even if it's untrue, it is still beautifully put.

– Italian Proverb

George E. P. Box wrote, "essentially, all models are wrong, but some are useful."[1] The mythological images employed herein are two such models. The Apollonian values order and objectivity, and perceives and prescribes more of both than the world warrants. Yet, despite flaws in the model, this metaphor is often valid and useful. Obviously, Apollonian assumptions pertain to physical objects (subatomic physics, notwithstanding). Yet, human behavior exhibits enough regularity *in some cases* to permit statistical predictions, psychology-based marketing techniques, and studies of organizational culture. For other domains of social phenomena, however, employing this model is like "trying to use a compass on the moon."[2]

Like the Apollonian metaphor, the Dionysian image of chaos and contingency is an imperfect model of reality. Indeed, to the extent that any phenomenon is, or is largely, stable,

1. George E. P. Box and Norman R. Draper, *Empirical Model-Building and Response Surfaces* (New York: Wiley, 1987), 424.
2. Simmons and Lipman, *The Story Factor*, 248.

linear, and unconditional, the Dionysian forces fade into the background—but they never disappear. While the two metaphors have been presented as a dichotomy, their relationship is actually hierarchical: the Dionysian transcends and includes the Apollonian. The second perspective craves order. The first admits that while order (or some semblance of order) exists sometimes and for some things, those phenomena are situated in a larger world of unpredictable change and socially constructed meanings.

The presumption of order is often useful, but how that utility is exploited is determined by values. Values, in turn, are subjective and influenced by contextual and social factors. Since contexts change and relationships evolve, values change on both collective and individual bases. These are the fundamental presumptions of the Dionysian: volatility, randomness, and interdependence. As a result, the paradigm contains its own antidote: the expectation of the unexpected, of error, of unforeseen and emergent insights. This is how the Dionysian "gains from disorder," in the words of Taleb: it privileges mental agility, adaptability, novelty, networks, and executive awareness.[3] Instead of seeking the singular Platonic ideal, this perspective follows the cardinal rule of improvisational acting: "yes, and. . ." That is, if asked to choose between science and art, between emotion and reason, between continuity and change, the answer is affirmative of both. The goal is not resolving paradox, but capitalizing upon it: stress, not stasis.

The analogy with improv is fitting for a metaphor inspired by the same Greek god that is associated with early Greek theater. Ancient Greece contained a theatrical culture that was particularly powerful in Athens. There, theater was incorporated in regular festivals honoring Dionysus, and may even have begun with improvised performances.[4] The theatrical analogy is appropriate in another sense as well: Greek culture valued the festivals and the stories told from its stages, and so they designed amphitheaters with precise mathematical formulas to control the acoustical properties. Hence, within Dionysius' theater, the Apollonian was put to good use.[5]

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3. Nassim Nicholas Taleb, *Antifragile: Things That Gain from Disorder*, Reprint edition (New York: Random House Trade Paperbacks, 2014), 13.

4. Aristotle writes in *Poetics* that, in the beginning, tragedy "originated from improvisation [as] a prelude to the dithyramb," which was a hymn in honor of Dionysus (Aristotle, *Poetics: Aristotle in 23 Volumes, Vol. 23*, translated by W.H. Fyfe. (Cambridge: Harvard University Press, 1932), 1449a).

5. For a modern analogy, the massive aggregation and manipulation of information—a very Apollonian operation—requires a more Dionysian attitude: "Ultimately, big data may require *us* to become more comfortable with disorder and uncertainty. The structures of exactitude that seem to give us bearing in life . . . are more malleable than we may admit; and yet admitting, even

Humility and Hedgehogs

> *We expect our introspective sense of mind to serve as a reasonable guide to the actual nature of mind. We expect it to give us a loose picture that, once enhanced by science, will represent the workings of the mind. But it is instead badly deceptive. Our loose picture of mind is a loose fantasy. Consciousness is a wonderful instrument for helping us to focus, to make certain kinds of decisions and discriminations, and to create certain kinds of memories, but it is a liar about mind. It shamelessly represents itself as comprehensive and all-governing, when in fact the real work is often done elsewhere, in ways too fast and too smart and too effective for slow, stupid, unreliable consciousness to do more than glimpse, dream of, and envy.*
>
> – Mark Turner, *The Literary Mind*

Commenting on Greek stories, both written and performed, Aristotle wrote that one of the most powerful devices was the climatic reversal of fortune.[6] In tragedies, this *peripeteia* (Greek for sudden change) was typically a shift from stability and comfort to disorder and someone's destruction.[7] The collapse is often attributable to *hubris.*

According to Assistant Professor of English, L. Kip Wheeler: "The Greek term *hubris* is difficult to translate directly into English. It is a negative term implying both arrogant, excessive self-pride or self-confidence, and also . . . a lack of some important perception or insight due to pride in one's abilities. It is the opposite of the Greek term *arête*, which implies a humble and constant striving for perfection and self-improvement combined with a realistic awareness that such perfection cannot be reached . . . As soon as the individual believes he has actually achieved *arête*, however, he or she has lost that exalted state and fallen into *hubris*, unable to recognize personal limitations or the humble need to improve constantly. This leads to overwhelming pride, and this in turn leads to a downfall."[8] The corollaries between the Apollonian and Dionysian metaphors should be obvious: the former is more vulnerable to overconfidence, and the later more inclined towards humility.

Arrogance invites tragedy, while humility underwrites learning and adaptation. Without a sense that other perspectives and approaches have value, and that values change, there is no motivation to consider the agile, adaptive, contextual, subjective regime of Dionysius. There is

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embracing, this plasticity brings us closer to reality" (Mayer-Schönberger and Cukier, *Big Data,* 48).

6. Aristotle, *Poetics*, 1452a.

7. L. Kip Wheeler, "*Peripeteia,"* in "Literary Terms and Definitions," last modified March 2, 2015, accessed April 29, 2015, http://web.cn.edu/kwheeler/lit_terms.html.

8. Wheeler, "*Hubris*," in "Literary Terms and Definitions."

no motivation to accumulate wisdom playfully, that is, by wandering and wondering. F. Scott Fitzgerald's criteria for "first rate intelligence" becomes unintelligible: holding "two opposed ideas in the mind at the same time and still retain[ing] the ability to function."[9] There is also no logic to Morgan's argument for a "mosaic of competing and complementary insights."[10] From the Platonic view, this kaleidoscopic approach is illogical. From an improv artist's view, it is irreplaceable.

Plato advocated looking past the shadows to uncovering *one big thing.* The Dionysian preserves a more executive perspective and values *knowing many things* (some of which are certainly amiable to Apollonian interpretations). This distinction draws from a line in Greek poetry: "The fox knows many things, but the hedgehog knows one big thing."[11] The phrase was popularized by Isaiah Berlin, who used the metaphor in a well-known essay about the author Leo Tolstoy. Like the contrast of *arête* and *hubris*, Berlin's metaphors have recognizable connections to the Apollonian and Dionysian images:

> Scholars have differed about the correct interpretation of these dark words, which may mean no more than that the fox, for all his cunning, is defeated by the hedgehog's one defense. But, taken figuratively, the words can be made to yield a sense in which they mark one of the deepest differences which divide writers and thinkers, and, it may be, human beings in general. For there exists a great chasm between those, on one side, who relate everything to *a single central vision*, one system less or more coherent or articulate, in terms of which they understand, think and feel—*a single, universal, organizing principle* in terms of which alone all that they are and say has significance—and, on the other side, those who *pursue many ends, often unrelated and even contradictory, connected, if at all, only in some de facto way*, for some psychological or physiological cause, related by no moral or aesthetic principle; these last lead lives, perform acts, and entertain *ideas that are centrifugal rather than centripetal*, their thought is *scattered or diffused, moving on many levels, seizing upon the essence of a vast variety of experiences* and objects for what they are in themselves, without consciously or unconsciously, seeking to fit them into, or exclude them from, any *one unchanging, all-embracing, sometimes self-contradictory and incomplete, at*

9. F. Scott Fitzgerald, *The Crack-Up*, ed. Edmund Wilson, Reprint edition (New Directions, 2009), 69.

10. Morgan, *Images of Organization*, 343.

11. The proverb appears in multiple Greek texts, including Plato's *The Republic* and a collection of saying written by the Sophist Zenobius, who found in it the works of Archilochus or Homer (Isaiah Berlin and Michael Ignatieff, *The Hedgehog and the Fox: An Essay on Tolstoy's View of History*, ed. Henry Hardy, 2nd edition (Princeton: Princeton University Press, 2013), 1).

> *times fanatical, unitary inner vision*. The first kind of intellectual and artistic personality belongs to the hedgehogs, the second to the foxes [emphasis added].[12]

Berlin classifies Plato as a hedgehog. The philosopher sought universal ordering principles and thus Plato's disciples, operating under their Apollonian models, ignore chaos to create an illusion of consistency and coherence. The irony is that foxes, by virtue of embracing paradox, have found a more fitting organizing principle that simply states there are no organizing principles. The paradigm presumes all paradigms are partial—including its own. Again, this cultivates an epistemological modesty that expects the world to function as a vast theater of masquerades and enigmas and shadows. There is *always* more than meets the eye.

"I saw it with my own eyes." We tend to trust information gathered first-hand: seeing is believing, as the saying goes. Yet, even our direct sensory perceptions are filtered by mental frameworks before we become consciously aware of them. What we see is one example. According to physicist Leonard Mlodinow, our vision is another example of a flawed, but useful, model: "the world we perceive is an artificially constructed environment whose character and properties are as much a result of unconscious mental processing as they are a product of real data. Nature helps us overcome gaps in information by supplying a brain that smooths over the imperfections, at an unconscious level, before we are even aware of any perception . . . We accept the visions concocted by our unconscious minds without question, and without realizing that they are only an interpretation, one constructed to maximize our overall chances of survival, but not one that is in all cases the most accurate picture possible."[13]

The sensory input is actually skewed or missing in places: your eyes are constantly executing rapid (but imperceptible) movements, peripheral vision lacks resolution, and the connection of the retinal nerve creates a blind spot just outside of the eye's focal point. Yet, the brain processes the incoming data and presents the conscious mind with the illusion of clarity. A similar process occurs for auditory data, in which a process called phonemic restoration fills in

12. Berlin, *The Hedgehog and the Fox*, 1-2. As Berlin continues, note the linkage to Morgan's description of metaphorical thinking: "Of course, like all over-simple classifications of this type, the dichotomy becomes, if pressed, artificial, scholastic, and ultimately absurd. But if it is not an aid to serious criticism, neither should it be rejected as being merely superficial or frivolous; like all distinctions which embody any degree of truth, it offers a point of view from which to look and compare, a starting-point for genuine investigation" (Berlin, *The Hedgehog and the Fox*, 2-3).

13. Mlodinow, *Subliminal*, 50.

missing information based on context.[14] Visual and auditory illusions are useful metaphors for the *cognitive* illusions humans employ to make sense of the world.

Stories in the Stone Age

> *Our brains were designed by evolution to develop story representations from sensory input that accurately approximate real things and experiences in the world. Those programs . . . let us predict what the world will be like and so act on it effectively. They are nature's way of solving the problem of knowledge.*
>
> – Alison Gopnik, *The Scientist in the Crib*

> *Narrative imagining, often thought of as literary and optional, appears instead to be inseparable from our evolutionary past and our necessary personal experience.*
>
> – Mark Turner, *The Literary Mind*

Humans possess a fundamental predisposition to think metaphorically. Many scholars link this habit with our evolution. While not conclusive, this theory suggests additional support for this chapter's main purpose: to outline a theory of Narrative Intelligence and explain how this central human capacity can encourage innovation.

To Play, or Not to Play. The patron god of Greek theater is also known for representing forces of ecstasy, fertility, lushness, and winemaking. Indeed, these images are directly connected to the festivals honoring him. Hence, those events were all about *play*, which represents what happened in, around, before, and after the theatrical performances held in Dionysius' name. For Professor Brian Boyd, being human is also all about *playing*.

The thesis of Boyd's work, *On the Origin of Stories*, is that storytelling, like all art, is an adaptive function founded on the mammalian instinct for play. Animals that play do so because playful activity enhances the fitness of their species, and thus those animals have evolved to intrinsically enjoy it.[15] The self-rewarding nature ensures the practice is repeated. Repetition reinforces neural pathways, creating an evolutionary advantage: strengthening skills applicable to that species' niche.

The Cognitive Niche: A Place of Patterns. Like other mammals, physical play is a critical component of our childhood development. But humans also play, and play for much longer throughout their life, in the domain we command: the so-called cognitive niche. Our evolutionary advantages accrue from intelligent decisions. Thus, we crave information and naturally seek

14. Mlodinow, *Subliminal*, 45-9.
15. Boyd, *On the Origin of Stories*, 1.

ways to categorize, manipulate, and employ that information.[16] In Boyd's description, we "have an appetite for information, and especially for pattern."[17]

The mind is constantly searching for patterns. In fact, people naturally see patterns even in random data, much like finding shapes in clouds.[18] The mind simply fills in the gaps, and, like our vision, softens the rough edges to produce a coherent image.[19] This instinct is powered by two assumptions: one, only partial information should be expected and two, patterns yield meaning.[20] Both are typically true, which is why this instinct is useful in the first place.

Patterns are also valuable because they economize information. Instead of approaching every situation as completely novel, we utilize a catalogue of mental maps to help us navigate the world. Referring back to the paradigmatic spectrum, some of these models function like tools of normal science: stability enables predictability. Sliding towards the other direction, the challenge increases. The challenge is matching a limited number of maps to the infinitely variable and constantly shifting landscapes of Dionysian phenomena. This occurs more or less without deliberate forethought, depending upon the scale of the mental map and an individual's cognitive ability to maintain executive-level awareness. Narrative Intelligence is about bringing some of these processes into conscious awareness and employing them with intention.

Typically, the mind latches onto the first sufficient model using only fragments of sensory data.[21] In fact, once a pattern is invoked, the mind tends to pay significantly less attention to its senses in order to prioritize its attention.[22] Humans quickly stop consciously attending to stimuli and, without a significant divergence from expectations, continue to operate from the selected mental map (the source of many cognitive biases). The map extrapolates what is likely to happen next and thus what one should do. Success reinforces the map, as well as the very process of relying upon maps. Failure, when significant enough to matter, but not existentially serious, encourages using a different map for similar situations in the future (it does not, however, fundamentally subvert the process itself). For obvious reasons, we have evolved to

16. Jones, *The Thinker's Toolkit*, 31-5.
17. Boyd, *On the Origin of Stories*, 14.
18. Gottschall, *The Storytelling Animal*, 104-5.
19. Bruner, *Actual Minds, Possible Worlds*, 28.
20. Haven, *Story Proof*, 35, 38-9.
21. Boyd, *On the Origin of Stories*, 20. Also see Hebert Simon's concept of "satisficing."
22. Bruner, *Making Stories*, 30-1.

prefer patterns that facilitate effective behavior in the world. Our brains are even chemically rewarded when our models match reality.[23]

In addition to guiding our behavior, this process guides our intellectual activity as well. Indeed, this is the reason all thinking is metaphor. Our species' advantage is the ability to conduct thought experiments. We compare images, such as our model versus reality, in order to evaluate our thoughts and actions, real or imagined. Furthermore, language allows us to capitalize on the physical and mental experiences of others. In this context, we may actually enjoy being wrong.

The Social Animal. We mentally play with patterns because of the evolutionary advantages such intellectual activity confers. Consider the insights gained by Berlin's fox and hedgehog metaphors (although this is an example of deliberate metaphorical thinking). Also note the playfulness of his methodology: "I never meant it very seriously. I meant it as a kind of enjoyable intellectual game . . . Every classification throws light on something."[24]

Berlin's subject matter was Tolstoy's literature, but all art, according to Boyd, is founded in the same basis—intuitive and automatic "cognitive play with pattern:"

> Just as play refines behavioral options over time by being self-rewarding, so art increases cognitive skills, repertories, and sensitivities. A work of art acts like a playground for the mind . . . of visual or aural or social pattern. Like play, art succeeds by engaging and rewarding attention, since the more frequent and intense our response, the more powerful the neural consequences. Art's appeal to our preferences for pattern ensures that we expose ourselves to high concentrations of humanly appropriate information eagerly enough that over time we strengthen the neural pathways that process key patterns in open-ended ways . . . Our extreme sociality amplifies our predilection for the cognitive play of art, through both competitive and cooperative processes, especially through our unique inclination to share and direct the attention of others.[25]

The shared "attention of others" is fundamental because our species' "most crucial domain" of information is information to, from, and about others.[26] The need to grasp other people, their

23. David Brooks, *The Social Animal: The Hidden Sources of Love, Character, and Achievement*, Reprint edition (New York: Random House Trade Paperbacks, 2012), 207-8.
24. Ramin Jahanbegloo, *Conversations with Isaiah Berlin*, 188.
25. Boyd, *On the Origin of Stories*, 15.
26. Boyd, *On the Origin of Stories*, 15.

intentions, their capabilities, their relationships, and their status is possibly the single greatest impetus for our advanced intelligence.[27]

As a social animal, we need mechanisms for enhancing group cooperation. The group, to enhance its collective evolutionary fitness, must share information, deepen its emotional bonds, coordinate activity, be attuned to one another, and, finally, promulgate and pass on and enforce behavioral norms.[28] For each of these functions—which combine to form a *common* sense—the members of the group must have two skills. The first is called a theory of mind.

Theory of mind is a term used in cognitive psychology to describe our capacity to explain others in terms of *their* emotions, ideas, and intentions. As social animals, we are endowed with the ability to automatically imagine others' inner states by observing their outward actions or their verbal expressions. We then use that theory to explain the beliefs and behaviors of others, or to make calculations about their reactions to hypothetical situations. This capacity is the "default way by which we construct and navigate our social environment."[29] Essentially, we have models of each other's models.[30] The second skill is related to this one: we build and validate our models through our ability to share attention.[31]

What catches our attention? Pattern catches our attention. What holds our attention? Relevance, emotional intensity, and the violation of pattern sustain our attention.[32] How, then, do we communicate information in social contexts in order to foster group cohesion? We tell stories—stories about the struggle of characters; characters we can empathize with, as they struggle to prevail against some unexpected breach of their expectations (and possibly the audience's).

Life is Full of Surprises. Physically, humans may not enjoy surprise, but psychologically we often relish it. We enjoy magic shows, visual illusions, and shocking endings to stories because the mind can take a perverse pride in being fooled. Technically, Kathryn Schulz points out, it is the humble realization that you *were* wrong that is often enjoyable. The space between the two

27. Boyd, *On the Origin of Stories*, 45. According to R. I. M. Dunbar, there is a direct correlation between the size of a primate's brain and the size of its social network (R. I. M. Dunbar, "Neocortex Size as a Constraint on Group Size in Primates," *Journal of Human Evolution* 22, no. 6 (June 1992): 469–93, doi:10.1016/0047-2484(92)90081-J.).
28. Boyd, *On the Origin of Stories*, 52, 57-8, 61, 64, 101-6.
29. Zunshine, *Why We Read Fiction*, 6-7.
30. Mlodinow, *Subliminal*, 86-9.
31. Bruner, *Making Stories*, 16.
32. Boyd, *On the Origin of Stories*, 89-93.

states is transited as quickly as possible or so glacially slow as to be imperceptible. Either allows us to avoid meandering in the very Dionysian domain in between. "The moment in which we can logically say 'I am wrong' simply doesn't exist," she writes in *Being Wrong*, because "in becoming aware that a belief is false, we simultaneously cease to believe it."[33] What can delight us is the discovery of a presumably better pattern, a more accurate image, a more useful metaphor.[34] As Clausewitz commented, "although our intellect always longs for clarity and certainty, our nature often finds uncertainty fascinating."[35] In other words, the executive perspective of the Dionysian expects the unexpected and is rewarded for its prescience.

The deeper contribution of stories, therefore, lies not in their factual data, but with the fact that the process itself is formative: facts cannot function without values, values are formed inter-subjectively, and inter-subjective communication is founded on stories. Stories told amongst the members of a group may have begun with gossip as a form of "verbal grooming:" quasi-truths tracking relationships and transgressions.[36] The cognitive ability to track that social data strengthened our ability to hold each other's attention. It also enhanced our capacity for mental dexterity, since social interactions are contextual, variable, and unpredictable; the very traits denied by the Apollonian perspective in its search for universal truths.

To Plato's chagrin, however, truth is not the only—nor the central—issue. Of course, to have purchase on our minds, stories must be true *enough*. That is, stories must offer sufficient coherence and fidelity.[37] The first is internal to the story and evaluates coherence in both senses of the word: the story's integrity (how well its fits together) and its clarity. The second, fidelity, juxtaposes the story against one's paradigms and determines the implications of the comparison (i.e. metaphorical reasoning). It is a measurement of how well a representation captures the subject being represented. If a story is relevant to one's life, faithful to one's perspective of reality, and in accordance with one's culture and character, these are *good reasons* to extract some insight from it.

As can be expected for a cognitive function that is fundamental to human evolution, we are innately equipped to evaluate stories—and indeed, all communication—on the basis of

33. Kathryn Schulz, *Being Wrong: Adventures in the Margin of Error*, Reprint edition (New York: Ecco, 2011), 184.
34. Boyd, *On the Origin of Stories*, 89; Oatley, *Such Stuff as Dreams*, 35.
35. Carl von Clausewitz, *On War*, trans. and ed. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1989), 86.
36. Boyd, *On the Origin of Stories*, 57-8.
37. Fisher, *Human Communication as Narration*, 47.

coherence and fidelity, guided by values, emotions, and pragmatic concerns. Verisimilitude, the *appearance* of accuracy, trumps veracity. Hence, we do not, and should not, obsess over truth when it comes to storytelling. In fact, accuracy probably subverts the power of a story. Surprise and intensity come easier outside the conventions of truth and these additional elements drive us to devote our mental resources to a story; to *pay* attention. It is a worthy investment.

"Our compulsion to tell and listen to stories with no relation to the here and now or even to any real past," Boyd writes, "improves our capacity to think in the evolutionary novel, complex, and strategically invaluable way[s]." He continues, "By developing our ability to think beyond the here and now, storytelling helps us not to *override* the given, but to be less restricted by it, to cope with it more flexibly and on something more like our own terms."[38] This directly contributes to the ability to follow Morgan's advice and remain unattached to any one image. It allows what Albert Einstein called "combinatory play."[39] Joshua Landy also endorses the ability to "dwell in metaphor:" "There is something over and above the local deployment of metaphors for strategic or aesthetic purposes, and that is what we might call a *figurative state of mind* . . . cultivating a generalized love for the figurative—if we come to *dwell* in metaphor, as Emily Dickinson would say—then our stance toward existence becomes subtly but powerfully shifted: the world becomes less concrete and more abstract, less impersonal and more humanized, its components less monadic and more interconnected. And as everything we see begins to point sideways to what is like it, rather than backward to what preceded it or forward to what follows, we find ourselves released from the tyranny of time."[40]

38 .Boyd, *On the Origin of Stories*, 49-50.

39. Einstein's full quote is also noteworthy for the emphasis on productivity of playfulness: "The words or the language, as they are written or spoken, do not seem to play any role in my mechanism of thought. The physical entities which seem to serve as elements in thought are certain signs and more or less clear images which can be 'voluntarily' reproduced and combined. There is, of course, a certain connection between those elements and relevant logical concepts. It is also clear that the desire to arrive finally at logically connected concepts is the emotional basis of this rather vague play with the above-mentioned elements. But taken from a psychological viewpoint, this combinatory play seems to be the essential feature in productive thought—before there is any connection with logical construction in words or other kinds of signs which can be communicated to others" (Greenspan and Benderly, *The Growth of the Mind*, 20).

40. Landy, *How to do Things with Fiction*, 64.

Apollo's Anomalies, Part Two

> *Story is a basic principle of mind. Most of our experience, our knowledge, and our thinking is organized as stories.*
>
> – Mark Turner, *The Literary Mind*

The Apollonian paradigm denies its own paradigmatic nature. Universal principles, uncovered by rationality, are incompatible with the notion that perceptions are interpreted through subjective and shifting frameworks. Our mental maps are always *partial*: incomplete and biased. The Dionysian metaphor revels in this predicament. The Apollonian rejects useful fictions, or at least strives to repair them. Hence, Plato's first step was to ban the poets. Many of his intellectual descendants echoed the chorus. The consequence is that the Apollonian paradigm cannot answer these questions: why did the poets and other storytellers not leave, and why are they increasingly called back to center stage?

The inability to account for the value of constructive falsehoods is an anomaly in the Apollonian model. What pushes this issue into the limelight is the reemergence of Dionysian perspectives across a wide range of human endeavors (summarized in Appendix A). Part of that nascent *zeitgeist* is the increasing appreciation of narrative as a central feature in thought and communication. While the Apollonian perspective undervalues storytelling as a means of communication or narrative as a fundamental mode of human thought, this narrative turn is increasingly highlighting the value of stories—even those that knowingly deceive us.

Storytelling Revival. According to one author, our culture is experiencing a "storytelling revival."[41] Stories have become "one of the most prominent currents in late twentieth century life."[42] Likewise, in his book, *The Storytelling Animal*, Gottschall concludes, "Story, and a variety of storylike activities, dominates human life."[43] He includes jokes, commercials, political commentary, sports casting, legal trials, dreaming, and children's pretend play. Noel Tichy's *The Leadership Engine* claims all successful leaders "lead through stories."[44] Roger Schank argues that "linking content information into stories . . . will trigger memories and index labels in the mind of the listener" and thus remain with the listener longer than mere facts will.[45] Stories are

41. Simmons and Lipman, *The Story Factor*, xiii.
42. Gary D. Fireman, et al, quoted in Haven, *Story Proof*, 103.
43. Gottschall, *The Storytelling Animal*, 8-11, 14-6, 32-3, 70. In one theory, stories are simply a continuation of what has occurred in childhood: even imaginative play has a narrative structure.
44. Denning, *The Secret Language of Leadership*, 105-6.
45. Haven, *Story Proof*, 67. Likewise, author and journalist Samir El-Youssef commented, stories "opened people's minds and awareness as my fact-based essays and articles never did and never could" (Haven, *Story* Proof, 40).

"one of the levers on the flywheel of design innovation" in the words of designer Marty Neumeier.[46] Peter Schwartz's *The Art of the Long View* advocates scenario-based planning using stories to "dream effectively" about the future.[47] Some law schools now offer courses in storytelling because they recognize that an attorney's ability to create and convey a narrative also contributes to courtroom success.[48] Future doctors can often enroll in medical humanities courses or even full degree programs on the subject. Stories improve the physicians' ability to practice medicine and, in turn, help patients heal faster.[49] This applies to both physical ailments and psychological conditions. Some now consider neurosis as an indication of "an insufficient, incomplete, or inappropriate story about oneself."[50] Even healthy, well-functioning people use stories to create "a kind of anthology of the self."[51]

The narrative turn is not limited to conveying factual information in story forms; the growing appreciation of storytelling applies equally to fiction. Of course, the transformative potential of literature is a familiar tenet of humanistic education. In *On Liberty*, John Stuart Mill claimed the function of high education is to create "capable and cultivated human beings" and not tradesmen: "Men are men before they are lawyers, or physicians, or merchants, or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers, or physicians."[52] The shift, however, is the recognition of literature's importance in other fields.

While literature has been denigrated as "impractical, often irrelevant, even useless," more scholars are coming to appreciate Mill's view of it as an "accumulated treasure of the thoughts of mankind."[53] For example, Greek plays are being used as therapy for returning combat soldiers.[54]

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46. Neumeier, *The Designful Company*, 88.

47. Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World*, Reprint edition (New York: Currency Doubleday, 1996), 4.

48. Coles, *The Call of Stories*, xviii; Bruner, *Making Stories*, 13; Bruner, *The Culture of Education*, 40.

49. Columbia University and the University of Southern California both have narrative medicine programs (Bruner, *Making Stories*, 105-6; Coles, *The Call of Stories*, xvii). Coles notes that, as a clinical psychiatrist in residence, he was once chided by his mentor to use "more stories, less theory" (Coles, *The Call of Stories*, 27). Many studies are demonstrating the power of stories to improve rate of healing both physical and psychological injuries (Haven, *Story Proof*, 105).

50. Bruner, *The Culture of Education*, 40.

51. Dan McAdams quoted in Denning, *The Secret Language of Leadership*, 89. Likewise, Simmons remarks: "To live in this world with purpose and meaning we must tell ourselves some story of vision that gives our struggle meaning" (*The Story Factor*, 17).

52. Donald Ahern and Robert Shenk, ed., *Literature in the Education of the Military Professional* (US Air Force Academy, 1982), 26-7.

53. Ahern and Shenk, ed., *Literature in the Education of the Military Professional*, 37, 27.

Medical doctors and attorneys and business leaders are turning towards classical works of literature.[55] Biographers are asking of their subjects: "what did they read?"[56] Works on international politics are peppered with examples culled from fiction.[57] Designers and computer scientists are exploring science fiction as a form of prototyping future technologies, asking "how can science fiction be a purposeful, deliberate, direct participant in the practices of science fact?"[58] Even the term *cyberspace* comes from William Gibson's sci-fi writings.[59] In *Red Plenty*, author Francis Spufford uses the form of a novel to portray actual economic concepts. Activists are invoking images of fantasy works as a sort of "dreampolitik:" tools for reimagining politics.[60]

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54. Coker, *Warrior Geeks*, xi.

55. For example, Joseph Badaracco uses literature at the Harvard Business School to teach students about leadership and decision making and morality. He outlines his rationale and specific examples in his work, *Questions of Character: Illuminating the heart of Leadership through Literature*. Another illustrative work is Lori Silverman's *Wake Me Up When the Data is Over: How Organizations Use Stories to Drive Performance.*

56. Rose, *The Literary Churchill*, x. "For Churchill, politics and literature were two sides of the same career, impossible to prise apart. His political goals and methods were shaped by what he read in books and saw on the stage. In turn, he recast his political experiences as literature, inevitably with some artistic license. In fact he made important policy decisions and composed memoranda with a view toward how they would appear on the page… He was an artist who used politics as his creative medium" (Rose, *The Literary Churchill*, xi).

57. In *Theory of International Politics*, Waltz uses *Who's Afraid of Virginia Woolf?* to demonstrate how the actions of individual agents are indirectly influenced by the structure of the system that socializes those agents and places them in competition. In another work of international relations, Thomas Schelling's *Arms and Influence* notes, "I have used some historical examples, but usually as illustration, not evidence. For browsing in search of ideas, Caesar's *Conquest of Gual* is rich reading and Thucydides' *Peloponnesian War* the best there is, whatever their historical merits—even if read as pure fiction" (vii). He goes on to quote Shakespeare's Henry V's use of threatened violence (11) and Joseph Conrad's *The Secret Agent* to address the paradox that deterrence may be enhanced by irrationality and limited self-control (37).

58. Julian Bleecker, "Design Fiction: A short essay on design, science, fact and fiction," March 2009, accessed November 1, 2014, http://drbfw5wfjlxon.cloudfront.net/writing/DesignFiction_WebEdition.pdf.

As examples, see *Make It So: Interaction Design Lessons from Science Fiction* Paperback by Nathan Shedroff and Christopher Noessel or *Science Fiction Prototyping: Designing the Future with Science Fiction* by Brian Johnson. Additionally, MIT's Media Lab teaches a course in "Science Fiction to Science Fabrication."

59. Thomas Rid, *Cyber War Will Not Take Place* (New York: Oxford University Press, 2013), 163-4.

60. Stephen Duncombe, *Dream: Re-Imagining Progressive Politics in an Age of Fantasy* (New York: New Press, 2007), 27.

The word itself means, *to make* or *to fashion*.[61] Fiction is not about falsehoods, but about possibilities—possibilities even the military increasingly wants to capitalize on.

Storytelling Soldiers.

> *The question of narrative has moved to the centre-stage of strategy.*
> – Lawrence Freedman, *The Transformation of Strategic Affairs*

The term *narrative* is now firmly ensconced in the military's lexicon. Many authors and even official documents employ the concept.[62] Thomas Elkjer Nissen recommends we "put the narrative first,"[63] and William Casebeer writes about a "counter-narrative" strategy to combat terrorism.[64] Another example is David Kilcullen's fundamental tenets of counterinsurgency: "Since counter-insurgency is a competition to mobilise popular support, it pays to know how people are mobilized. In most societies there are opinion-makers . . . who set trends and influence public perceptions. This influence . . . including the pernicious influence of the insurgents—often takes the form of a 'single narrative': a simply, unifying, easily expressed story or explanation that organizes people's experience and provides a framework for understanding events."[65]

Others argue there is insufficient attention to internal audiences. In *War from the Ground Up*, Emile Simpson suggests that one function of strategy is to unify one's own strategic audiences, which he equates to the representatives of Clausewitz's trinity: government, people, and military commanders.[66] Audrey Cronin's work, *How Terrorism Ends*, is another example, as is Tadd Sholtis' *Military Strategy as Public Discourse.* Cronin emphasizes the need for democratic leaders to persuade their citizens to not overreact to terrorist attacks, which benefits the terrorists.[67] Sholtis argues that failing to treat military strategy as a public process for gaining

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61. Fiction comes from the Latin *fingere*, to make. Interestingly, in Greek, to make is *poesis*, from which the word poetry is derived (Oatley, *Such Stuff as Dreams*, 7).

62. Joint Publication 3-24, *Counterinsurgency Operations*, uses the phrase 12 times. Other notable contributions come from Simpson (*War from the Ground Up)* and Corman (*Narrating the Exit from Afghanistan*).

63. Nissen, "Narrative Led Operations," 3.

64. William Casebeer, "Military Force and Culture Change Systems, Narratives, and the Social Transmission of Behavior in Counter‐Terrorism Strategy" (Masters thesis, Naval Postgraduate School, 2006); William Casebeer and James Russell, "Storytelling and Terrorism: Towards a Comprehensive 'Counter-Narrative Strategy,'" *Strategic Insights* 4, no. 3 (March 2005).

65. David Kilcullen, "Twenty-Eight Articles: Fundamentals of Company-level Counterinsurgency," *Small Wars Journal*, March 2006, 7. He expands on this concept in *Out of the Mountains*.

66. Simpson, *War From the Ground Up*, 62-3.

67. Cronin, *How Terrorism Ends*, 203-6.

political consensus on those questions is the same thing as failing to have a viable strategy.[68] Sholtis' work correctly emphasizes the narrative process. Retired Brigadier General Huba Wass de Czege similarly advocates a central role for narratives in crafting and conveying operational designs for wicked scenarios.[69] Like others, he points to the fundamental relationship between a unifying vision, communicated as the "Commander's Intent," and the execution of decentralized operations.[70] David Culkin's article "Discerning the Role of the Narrative in Strategy Development" is even more explicit, writing: "A strategist, then, links policy to operational planning. He or she attempts this by effectively merging creative methods from literary theory with conceptual models to formulate meaningful narratives. The story must describe how the ends-ways-means outlined will produce the desired effects in time and space. Linking these conceptual frameworks to realistic application requires developing and personally selling the *strategic narrative* that describes how the ways and means accomplish the ends . . . Strategists must link policy narratives to strategic narratives by writing fiction where intelligence and guidance fall short."[71]

As Culkin insinuates, the pivot to narratives includes a growing appreciation for a particular genre of narratives: the written story. In this realm, too, the military is increasingly cognizant of literature's potential.

The Pen *and* the Sword.

> *[An officer] cannot really develop his analytical skill, insight, imagination, and judgment if he is trained simply in vocational duties. The abilities and habits of mind which he requires within his professional field can in large part be acquired only through the broader avenues of learning outside his profession. The fact that, like the lawyer and the physician, he is continuously dealing with human beings requires him to have the deeper understanding of human attitudes, motivations, and behavior which a liberal education stimulates.*
>
> – Samuel P. Huntington, *The Soldier and the State*

Many officers share the sentiments of Mill and Huntington: military education cannot ignore the humanities. For example, Admiral Stockdale defended teaching literature in the service

68. Sholtis, *Military Strategy as Public Discourse*, 1. The discussion on paradigm shifts and incommensurability supports this inner focus.

69. Huba Wass de Czege, "Systemic Operational Design: Learning and Adapting in Complex Missions," *Military Review*, January-February 2009, accessed July 27, 2014, http://www.au.af.mil/au/awc/awcgate/milreview/de_czege_systemic_op_design.pdf, 3, 9.

70. See Czerwinski's "C2 at the Crossroads" article (Parameters, 2006), John Boyd's concepts of organic command and control, or Lawrence's *The Transformation of Strategic Affairs.*

71. David Culkin, "Discerning the Role of the Narrative in Strategy Development," Military Review, 62-3.

academies, stating "our country deserves military leaders" familiar with "the story of man and human nature in fact and fiction."[72] Another prisoner of war, Dave Burroughs argued that the best training for captivity was the humanities: "Not the pretend POW camp. Books. Plays. Poems. Philosophy. The big ideas. The persistence of values. The real life-saving stuff."[73]

The study of literature for military professionals has long been supported by the humanity departments in the service academies. Recently—as yet another symptom of the narrative turn—officers outside of academia are commenting on the value of literature. The service chiefs release their own official book lists each year, for example, and fiction is sometimes on the list. More recently, the Atlantic Council launched a project called the Art of Future Warfare. Their vision is a forum for writers and other artists to "enjoy a valued place in the defense establishment's planning and preparation for the future of warfare and social conflict; in which unconventional, imaginative thinking and expression contribute meaningfully to the study and professional conduct of diplomacy, defense policy and military operations; in which fiction about future wars holds a regular place on the reading lists of military professionals."[74] Similarly, the Center for International Maritime Strategy launched an initiative with the military blog "The Strategy Bridge" and the Washington D.C. Shakespeare Theater Company. The purpose is to use a Shakespearean play as a springboard for reflecting on national security strategies.[75] Lastly, another military blog, War Council, invited strategists to describe their five most influential books. Two months and 35 contributors into the "War Books" series, over a tenth of the books listed were fictional. Additionally, six of the individuals identified a work of fiction as their most influential book.[76] Admiral James Stavridis (retired), the longest serving Combatant Commander in recent US history, had this to say about the book that shaped him the most:

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72. Ahern and Shenk, ed., *Literature in the Education of the Military Professional*, vii.

73. Ahern and Shenk, ed., *Literature in the Education of the Military Professional, 5-6.*

74. "The Art of Future War Project," *Atlantic Council*, accessed April 28, 2015, http://artoffuturewarfare.org/about/.

75. Nathan K. Finney, "After Regime Change: Dunsinane as a Window into War and Warfare," *The Strategy Bridge*, 9 February 2015, https://medium.com/the-bridge/after-regime-change-632b526f3b1d.

76. Matt Cavanaugh, "WarBooks," *War Council*, 30 November 2014, http://www.warcouncil.org/warbooks/2014/11/30/introducing-warbooks-and-requesting-personal-profiles. Data is current as of 4 February 2015. Fiction works with multiple entries are Anton Myrer's *Once an Eagle*, Norman Mailer's *The Naked and the Dead*, and Robert Heinlein's *Starship Troopers*. Interestingly, *Starship Troopers* is taught at military academics and the US Naval Academy has an endowed professorship named for the author, the Robert A. Heinlein Chair in Aerospace Engineering (Singer, *Wired for War*, 156).

> Not a single book, but the collected works of Hemingway have had great influence on me. Taken together, they cover so many of the situations in which we find ourselves in the military and in the lives we have led—war itself, of course; but also the challenges of relationships, the turmoil of change, the danger of over-reliance on others, the need for a moral code, the bleak outcomes life offers in the end, the sense of resilience, a passion for life and all that it offers—the list goes on and on. Classics that I come back to again and again are 'The Sun Also Rises,' 'For Whom the Bell Tolls,' 'The Snows of Kilamanjaro,' 'The Old Man and the Sea,' 'A Farewell to Arms,' 'A Moveable Feast,' and the Nick Adams short stories. I own a half dozen first editions, and a signed copy of 'A Farewell to Arms' that I count among my most prized possessions.[77]

What makes Ernest Hemmingway so powerful for Stavridis is the fact that war is a major element of the setting. *Consuming* fictional works on warfare is a logical source of insights for reflective warriors. The Hemmingway example, however, points out that service members, like "Papa" himself, are also *producers* of fiction. For instance, *The Ugly American* was written by a professor and a military officer who decided they wanted to address mistakes Americans were committing in Southeast Asia. According to Lawrence Freedman, "they decided, correctly, that they could make their point more effectively through fiction."[78] Other notable examples of other warrior-writers include Tim O'Brien's *The Things They Carried* and James Salters' *The Hunters.* Unlike *The Ugly American,* what these works sought to convey was not necessarily factual information, or even a moral. Instead, they relay realistic sensations felt during the experience of war: values, context, and subjectivity instead of fact, causality, and universals.

These writers are sensing a new security environment, the very factor that Rosen associates with successful military innovation. The shift towards a more Dionysian perspective puts greater emphasis on the lower end of the political spectrum, persuasion. Persuading internal and external audiences requires more than facts—it requires an appreciation of narrative as a fundamental mode of human thought, storytelling as a effective means of communication, and even literature as a way to encourage innovative thinking. In other words, it is increasingly clear that we need leaders with high levels of Narrative Intelligence.

Narrative Intelligence

77. James Stavridis, "WarBooks Profile: Admiral (Ret.) James Stavridis," *War Council*, 30 December 2014, http://www.warcouncil.org/warbooks/2014/12/30/warbooks-profile-admiral-james-stavridis.

78. Freedman, *Strategy*, 187-8.

The image of Dionysus suggests Plato's prejudices were ill founded, including his bias against storytelling. Indeed, one symptom of the nascent Dionysian paradigm is the growing appreciation of stories. Many scholars in many fields are suggesting that stories can do many things. In this thesis I suggest another: stories can encourage innovation. That is, specific stories can *ennoble* the role of the innovator—creating, in fact, a new category of heroism; and stories can *cultivate* innovative thinking by nurturing cognitive abilities, moral courage, and communication skills. Understanding how these effects occur and applying them in practice are qualities of high Narrative Intelligence.

The term appears to have a two-fold heritage. First, Denning defines Narrative Intelligence as: "[The] capacity to 'think narratively' about the world . . . to understand the world in narrative terms, to be familiar with the different components and dimensions of narratives, to know what different patterns of stories exist and which narrative patterns are most likely to have what effect in which situation . . . to anticipate the dynamic factors that determine how the audience will react to a new story and whether a new story is likely to be generated in the mind of any particular audience by any particular communication tool."[79] He attributes his inspiration to Carol Pearson's exploration of mythical archetypes in *The Hero Within.* In that book, and in her later work on organizational culture, she argues for awareness, and the practical application, of these exemplary stories. Denning also notes the use of the phrase in Artificial Intelligence (AI) research, but insists his use is dissimilar.

The origin of the AI term is insightful, however. According to Michael Mateas and Phoebe Sengers, co-chairs for the 1999 American Association for Artificial Intelligence Symposium, AI research has been interested in narratives and stories for decades.[80] Work on the area reached a peak in the 1970's and early 1980's. The entire field then suffered funding cuts and AI research shifted to narrower problems: "Researchers tried to make AI more like engineering than like a craft or an art. This required focusing on problems with discrete measurable outcomes in which it is possible to say with certainty that a program achieves or does not achieve the given objective. Yet such a research agenda rules out the ability to work on complex phenomena such as the human use of narratives precisely because the complexity of such a phenomenon rules out the possibility for complete, decisively testable models."[81] In other

79. Denning, *The Secret Language of Leadership*, 44-5.

80. Michael Mateas and Phoebe Sengers, "Narrative Intelligence," American Association for Artificial Intelligence 1999 Fall Symposium, Technical Report FS-99-01 (Menlo Park: AAAI Press, 1999): 1.

81. Mateas and Sengers, "Narrative Intelligence," 1.

words, the focus suggests an Apollonian model, but researchers eventually realized they needed a more Dionysian approach.

Innovations in AI required innovations in how scientists approached the problem. For example, it became acceptable to operate with incomplete theories, and to expect results of experiments to be indecisive.[82] Instead of postulating a hypothesis and testing it using normal scientific methods, AI researchers adopted a more contingent and iterative model wherein "one builds to know what to think and thinks to know what to build."[83] Test for AI programs focused on "nonlinear, interactive, and networked forms of media."[84] Additionally, it required an unusual degree of interdisciplinarity and eventually the field returned to narratives, including the work of Turner and Bruner.[85]

The reemergence of narrative perspectives in AI is marked by the start of an unofficial group formed at the Massachusetts Institute of Technology Media Lab. Two students, Michael Travers and Marc Davis, brought together a diverse group of students, faculty, and guests to examine the interconnections between AI and literary theory. Travers and Davis called it the Narrative Intelligence Reading Group.[86] This is often cited as the origin of the phrase, Narrative Intelligence.

AI researchers continue to derive insights by applying metaphors in the exact fashion Morgan advocates: juxtaposing the image of an artificially intelligent machine with image of storytelling humans. As some frame the problem, it is the computer's very incapacity at such analogous reasoning that is the "important missing piece . . . this ability pervades almost every aspect of what we call intelligence."[87] Basically, the AI researchers sought the essence of humanity and they found it in the Dionysian. Just note the terms used above: incomplete theories, indecisive tests, contingency, iterations, nonlinearity, interactivity, interdisciplinary, and of course, narratives. Thus, while Plato shut the poets out of the polis and sought a more rational,

82 .Mateas and Sengers, "Narrative Intelligence," 2.

83. Mateas and Sengers, "Narrative Intelligence," 3.

84. Blair, D. and Meyer, T. "Tools for an Interactive Virtual Cinema." *Creating Personalities for Synthetic Actors: Towards Autonomous Personality Agents.* Robert Trappl and Paolo Petta, ed. (Berlin: Springer Verlag, 1997), 83.

85. Interestingly, one author notes, "because of the complex nature of this work, which attempts to create a broad fusion of artistic, social, and technical ideas, this paper is also structured differently from a traditional research paper. Many parts of this paper use poetic and allusive techniques" (Trappl 83). I attempt a similar tone in this thesis for similar reasons.

86. http://www.cs.cmu.edu/afs/cs/user/michaelm/www/nidocs/DavisTravers.pdf

87. Mitchell, *Complexity*, 187.

mechanical world, scientists have found a key component for making machines more human-like: invite the storytellers back in.

Inspired by both Denning and AI, the theory of Narrative Intelligence offered here takes a synthetic approach. Its opening proposition is that all thinking and all communication is narration; the MIT graduate students were right to intuit that humanity is differentiated from other intelligent animals, and from artificially intelligent computers, by its unique Narrative Intelligence. The theory borrows heavily from Fisher, especially at the macroscopic level of analysis. Many more scholars, such as Bruner, Turner, and others mentioned in the introduction, are incorporated as the level of analysis scales down to stories and then further to fiction. The objective, again, is to demonstrate a theoretical basis for incorporating fiction into PME.

A Theory of Narrative Intelligence

This section offers the how for the why provided in the section on story's evolutionary origins. The Dionysian nature of our social, dynamic, and dangerous environment encourages telling stories about other people and their struggles and surprises, because this emotional vividness holds our attention. Yet, the Apollonian paradigm treats story as a pariah, scorns emotion as a distraction, and disdains unpredictability: meaning should be derived from universal logic and separated from values. Researchers such as Burner, Turner, Fisher, and some at the MIT Media Lab disagree. Meaning, instead, is derived from sequence and values; that is, narrative. Understanding this and applying it, that is Narrative Intelligence.

Acoustics in the Amphitheater. It would be incorrect to write that we need a new paradigm of thinking and communication based on the Dionysian model. Chaos is not communicable, but the letters on the page that represent the *idea* of chaos are. In other words, thinking and communication are symbolic, and somewhat orderly, representations employed in patterns established by conventions: letters, words, rules of grammar, and so on. All thinking is metaphor because we have, in Turner's words, literary minds. Images are juxtaposed to generate insights just as words are juxtaposed over concepts to generate definitions.

For Fisher, the "master metaphor" to describe our thinking and communication is narrative. He defines narrative as "any symbolic communication with sequence and meaning."[88] Given that all communication employs symbols, and all humans naturally perceive meaning in

88. Fisher, *Human Communication as Narration, 62, 58*. Note, this is yet another symptom of the narrative turn within the Dionysian *zeitgeist*.

patterns, the essence of narration is simply events situated in time. While universal Platonic forms may escape temporal constraints, nothing human is divorced from time. In fact, nothing at all has escaped the arrow of time since the beginning of the universe.[89]

The Second Law of Thermodynamics states that, as time progresses, disorder increases as well. The Dionysian perspective appreciates this law of entropy and offers stories as a counterforce. It is a counterforce, however, that must be symbolic, subjective, and shifting in order to resonate with this image of communication and thinking. Those symbols never match reality. The metaphor is always a masquerade, since bias, culture, context, and value all draw the image away from Plato's ideal of objective truth. Regardless, that objective reality changes too often and too unpredictably for meaning to be anything other than contingent. Furthermore, our shared symbols, flawed as the world contrives to make them, are never perfectly coincident with each other either. Thus, meanings are contextual, shifting, value laden, possibly contradictory, and likely inaccurate. With no one, right answer, it pays to be like a fox, trusting the intuition of many things over the logic of one big thing; trusting narrative patterns to proffer a menu of meanings from which to select provisional truths that offer good enough reasons *right here, right now* to secure a relatively advantageous position.

Some Models are More Useful than Others. This theory of Narrative Intelligence is a model for human communication and thinking. In the context of this project, the purported utility of the model is encouraging innovation. It aims to be one of those models that are useful, despite being wrong.

Some writers have offered a theory of theories, or a meta-theory; a prescriptive model for developing and evaluating theories. For example, in "An Imperfect Jewel," Harold Winton writes that theories should yield definitions, classifications, explanations, connections, and expectations.[90] The remainder of this section offers those at three levels of analysis: narratives, then stories, then fiction.

89 .For more on how time and the universe arose simultaneously, see: http://www.hawking.org.uk/the-beginning-of-time.html

[90] Harold R. Winton, "An Imperfect Jewel: Military Theory and the Military Profession," *Journal of Strategic Studies* 34, no. 6 (2011): 854-6.

Recasting *Logos.*

> *Science . . . is an extension of rhetoric. It was invented in Greece, and only in Greece, because the Greek institution of the public assembly attached great prestige to debating skill . . . A geometric proof is . . . the ultimate rhetorical form.*
>
> – Alan Cromer, *Uncommon Sense*

For Plato, *logos* meant logic. For Fisher, *logos* still means logic, but logic is never purely objective or ordered—though it sometimes is. Apollonian, or pseudo-Apollonian, phenomena are puzzles to be solved by technical discourse (philosophy in Plato's day, science today). The puzzle-solving techniques are highly specialized. Experts in specific domains of knowledge are masters of arguing in accordance with the conventions of their discipline (i.e. their paradigm).[91] Hence, astronomers conduct what Kuhn called normal science in a manner different than say, chemists. Each, however, perform scientific research according to a wider paradigmatic structure Fisher calls the *logic of reasons*.

The logic of reasons is the type of reasoning found in textbooks about formal argumentation: argument validity, soundness, formulation of propositions, role of evidence, and burden of proof.[92] The structure evaluates communication on specific types of questions: is the statement eligible to be a fact, are any salient facts missing, are there any irrelevant facts, are the facts connected by sound reasoning, does the conclusion flow from the argument, and does the conclusion solve the puzzle or enable universal, verifiable predictions. Bruner calls this logic a "powerful prosthetic device," which has "been developed over the millennia" to guide analysis and application of Apollonian phenomena.[93] While this provides insights on *things*, it fails to account for understanding *people*.

"With knowledge of agents, we can hope to find that which is *reliable* or *trustworthy*; with knowledge of objects, we can hope to discover that which has the quality of *veracity*," according to Fisher, and "The world requires both kinds of knowledge."[94] Thus, his work is an attempt to situate both technical communication and poetic, rhetorical communication within a common framework: "to formulate a theory of human communication that recognizes

91. Fisher, *Human Communication as Narration*, 59-60.
92. Fisher, *Human Communication as Narration*, 106-9.
93. Bruner, *Actual Minds, Possible Worlds*, 13.
94. Fisher, *Human Communication as Narration*, 78.

permanence and change, culture and character, reason and value, and the practical wisdom of *all* persons."[95] That shared foundation is narrative.[96]

Imagine the narrative framework as an amphitheater. In the theater, precise acoustic design transports the actors' voices to the audience's ears. The precise manipulation of space, material, shapes, and sound is a technical feat. It is only valuable, however, because the story coming from the stage is appealing. The Apollonian serves the Dionysian. Meaning trumps math. Assessing the first is primal, but applying the second is an acquired practice.

Fisher proposes a paradigm of communication based on narration and thinking based on narrative rationality. He states, "Humans, as rhetorical beings, are as much valuing as they are reasoning animals. I am also convinced that value judgments are inevitable, that they are not irrational, that consensus about them will never be fully realized, and that no analytically grounded hierarchy of values will ever claim universal adherence."[97]

Combining Fisher's concepts with the evolutionary argument presented above yields the following propositions for a theory of Narrative Intelligence (NI):

1. Because of the inescapable element of time, communication has a temporal basis.
2. Time implies sequence and we evolved to presume sequences reveal patterns.
3. We intuitively expect patterns to have meanings.
4. Hence, because it automatically invokes sequence and meaning, all human communication is narration. This is true even when we communicate technical knowledge.
5. Furthermore, the meaning of a pattern is shaped by personalities and culture. That is, meaning is constructed inter-subjectively.
6. Because of its subjective nature, the meaning invested in any communication is personalized and contingent.
7. We instinctively evaluate the internal accuracy and external utility of communication.
8. If one senses sufficient coherence and fidelity, the communication can be become the basis for beliefs and behaviors—at least contingently.

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95. Fisher, *Human Communication as Narration*, 98. Note the allusions to both Apollonian and Dionysian images.

96. Fisher is more ambitious than Bruner, who uses the example of Gardner's multiple intelligence theory and adds a narrative mode of thinking. For Bruner, narrative thinking and logical thinking are "complementary" but "irreducible to one another" (Bruner, *Actual Minds, Possible Worlds*, 11).

97. Fisher, *Human Communication as Narration*, 57.

Narrative Intelligence is an intuitive skill, an aptitude we are all endowed with, more or less, just as one may have more or less social or emotional intelligence.[98]

Defining Moments. Theories must both define their field and define the terms of the debate within that field. The theory of NI addresses all human communication. Communication is "symbolic interpretations of aspects of the world occurring in time and shaped by history, culture, and character."[99] All communication is narration because it involves sequence and meaning. NI is the ability to evaluate communication on the basis of *good reasons*.

According to Fisher, "Reasons are good when they are perceived as (1) true to and consistent with what we think we know and what we value, (2) appropriate to whatever decision is pending, (3) promising in effects for ourselves and others, and (4) consistent with what we believe is an ideal basis for conduct."[100] In other words, good reasons arise when a narrative is internally coherent and when its meaning is realistic, relevant, and valuable. A narrative is thus judged by "the soundness of its reasoning and value of its values."[101] Elsewhere he writes, "a good reason is a warrant for a belief, attitude, or action and the value of a value lies in its relevance, consistency, and consequence, and the extent to which it is grounded on the highest possible values. Put another way, a value is valuable not because it is tied to a reason or is expressed by a reasonable person per se, but because *it makes a pragmatic difference in one's life and in one's community* . . . The final judgment of what to believe or do is thus made by inspection of 'facts,' values, self, and society; it is inevitably an intersubjective and pragmatic decision. What is more, it is a rational one."[102]

This particular form of rationality is not the Platonic rationality. Instead, it is based on coherence and fidelity. These criteria were mentioned earlier in reference to stories, but they apply to all narratives. That is, all human communication can be judged on these terms. Technical discourse may offer logical reasons to accept an internally *coherent* argument, but fundamentally we must decide how much that argument comports with our values and our view of the world. Good reasons come from what we *feel* to be true and useful and valuable.[103] In

98. Daniel Goleman, *Social Intelligence: The New Science of Human Relationships*, Reprint edition (New York: Bantam, 2007); Daniel Goleman, *Emotional Intelligence: Why It Can Matter More Than IQ*, 10th Anniversary edition (New York: Bantam Books, 2005).
99. Fisher, *Human Communication as Narration*, xiii.
100. Fisher, *Human Communication as Narration*, 194.
101. Fisher, *Human Communication as Narration*, 88.
102. Fisher, *Human Communication as Narration*, 111.
103. Fisher, *Human Communication as Narration*, 47-8.

other words, they are *good*, as in persuasive, as well as *good*, as in appealing to our sense of morality.[104]

The Apollonian paradigm may shudder at the thought, but that reaction reveals a subjective undercurrent to even the most scientific endeavor. Knowing the truth is a more narrow perspective than knowing how an experience is invested with meaning.[105]

Hamlet's Castle. Even expositions and equations exhibit sequence and meaning. Thus, they can be assessed for coherence and fidelity.[106] Generally speaking, the soundness of their reasoning is judged by the logic of reasons. Each scientific field has specific puzzle-solving paradigms to assess the coherence of a technical communication. Recall, however, the paradigmatic spectrum: puzzle-solving methods are subsumed by larger paradigms that ask, so, what?; what is the *value* of that puzzle's solution? The answer to this question is *always* subjective and hence based on the logic of good reasons.

Who cares to hear Greek actors when the narrative is incoherent or lacking in verisimilitude *to that listener*? In other words, even with ideal acoustical qualities, why pay attention when no good reasons are perceived? While the logic of acoustical design can be universal and quantifiable, this narrative logic of good reasons cannot. We should expect complexity and change and chaos in such subjective evaluations. We should expect even scientific "reasons" to emerge from "unreasonable" places.

Some physicists claim that physics is only five percent observation and "ninety-five percent speculation."[107] Kuhn, like Popper before him, describes how scientists and mathematicians sometimes rely upon stories to create concepts that mature into verifiable

104. Unlike the theory of NI presented here, Fisher only endorses the second clause.

105. Everett Dolman writes, "Truth and accuracy are only rarely the same. Facts are not truth, and the truth is only partially factual. Truth is a matter of utility; accuracy is not . . . A theory is considered *true*—or more properly valid—to the extent that it is *useful*. That is, to the extent to which it aligns our expectations of the future and in this way makes our actions *meaningful* . . . greater truth is in no way the result of greater accuracy. Indeed, as we shall see later, greater accuracy quite often obscures the truth" (Everett C. Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (London: Routledge, 2005), 72).

106. Verisimilitude trumps veracity and thus fidelity is meant to invoke a sense of faithfulness: how well does the narrative match one's subjective perception of reality. It is possible, when discussing technical communication, for fidelity to be more objective: how well does the representation of the Apollonian phenomena match the external reality. To differentiate the two levels of analysis, the technical argument and then the implications of that argument, I refer to the first as the logic of reasons and generally reserve fidelity for the more executive "so, what?" question.

107. Bruner, *The Culture of Education*, 123-4.

hypotheses.[108] Furthermore, whether those concepts are valuable is a product of culture and character. The scientific endeavor itself relies on good reasons to believe its efforts are worthwhile.[109] Science may see a stone castle, Niels Bohr once said to Werner Heisenberg, but the physical matter takes on new meaning when it is *Hamlet's* castle.[110]

The Logic of Good Reasons. Evaluating a story such as Shakespeare's *Hamlet* and evaluating the physical evidence about whether the Kronberg castle truly is the character's home are fundamentally the same. Both are narratives and so both are subject to the logic of good reasons. Although we intuitively evaluate communication on the basis of coherence and fidelity, NI theory offers an explicit approach that expands on the internal-external blend of these two criteria:[111]

1. What values are implicit or explicit in the narrative?
2. Are those values relevant to the context?
3. Are any relevant values missing?
4. How do those values interact in this particular context?
5. If actions and beliefs are guided by that network of values, what consequences are reasonable?
6. Do the consequences resonate with the operable values?
7. Do those values resonate with one's experiences?
8. Do those values resonate with one's view of "universal" ideals?

In sum, for our metaphorical minds, the question is two-fold: does this narrative offer reasons that are good and appeal to goodness, i.e. reason and value? If so, there are *good* reasons to accept the narrative as an analogy to guide beliefs and behaviors.

With each step, the evaluator is forced to delve further into subjective territory of others—and herself. Yet, this is precisely the point:

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108. Bruner, *Actual Minds, Possible Worlds,* 12. Less surprisingly due to the its social nature, Richard Heilbroner admits he and other economists turn to stories when formal theories fail to provide adequate explanations of economic phenomena (Bruner, *Actual Minds, Possible Worlds,* 42).

109. Barbara Czarniawska, *Narratives in Social Science Research* (London: SAGE Publications Ltd, 2004), 7.

110. Gordon H. Mills, *Hamlet's Castle: The Study of Literature As a Social Experience* (Austin: University of Texas Press, 1976), i.

111. The term and inspiration come from Fisher, but the description is more like Bruner's "narrative mode" of thinking. This is also similar to the "logic of appropriateness," James March describes: a logical, systematic approach to making decisions based on factors such as identity and value (*A Primer on Decision Making,* 58).

> One can be fairly 'objective' about what values are in fact present in a message, but as one moves to the questions of relevance, effects, confirmation, and ideals, greater and greater degrees of 'subjectivity' enter into the assessment. The intrusion of such 'subjectivity' is not a fault in a logic of good reasons. Instead, it is a recognition of the very nature of human communication, and of the nature of subjects amenable to rhetorical expression. By making the considerations of values a systematic and self-conscious process, the logic of good reasons fills the space left open by technical logic with its primary concern with formal relationships and certitude. It also goes beyond traditional rhetorical logics, which have not provided such a system of assessment. In other words, the logic of good reasons is important because it renders open and intelligible the grounds and valuing of interpreter-critics. And by doing so, it acknowledges and encourages awareness of the contingent character of rhetorical communication and provides information that enhances discourse of truly fundamental matters.[112]

This is meant to be a very Dionysian effort: synthesis instead of analysis, empathy instead of objectivity, reflection over Platonic rationality, complexity and ambiguity instead of order and convention.[113]

This can result in exactly the type of thinking required for innovating in wicked contexts. First, the logic of good reasons "can generate a sense of what is good as well as what is reasonable, to ensure that people are conscious of the values they adhere to and would promote in rhetorical transactions, and to inform their consciousness *without dictating what they should believe.*"[114] In addition to value-awareness, fluency with the logic of good reasons promotes rhetorical competence: "[which] implies at the very least that one can invent content for communication, compose an appropriate discourse for its communication, present a message in manners appropriate to the medium of communications, audience, and the situation, analyze and evaluate one's own and others' messages . . . One cannot be rhetorically competent without the ability to discern the presence, relevance, consequences, and consistency of values expressed or projected for expression within a specific rhetorical situation."[115]

Narrative Intelligence subsumes both rhetorical competence and value-awareness. As alluded to above, the theory connects NI with the skills needed for encouraging heroic innovation. The conclusion addresses this explicitly. But in order to connect the use of fiction in PME to NI, two more subsets of narrative must be addressed. The first is story.

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112. Fisher, *Human Communication as Narration*, 109-110.
113. Bruner, *Actual Minds, Possible Worlds*, 9-10, 39, 127-9.
114. Fisher, *Human Communication as Narration*, 113.
115. Fisher, *Human Communication as Narration*, 115.

Improving NI through Stories. NI is innate. The *theory* of NI must be taught (and, I argue, *should* be taught). The objective is not to learn the skill per se, but the ability to think about the skill; to think about how we think and hence, how we communicate. Fisher and Bruner agree: this meta-cognitive skill, should—as we move up Bloom's taxonomy—make us better at employing the skill. Indeed, since thinking and communication are so fundamental to all human endeavors, this begins to answer General Kwasts' charge. *The theory of NI states Narrative Intelligence is necessary for innovative thinking.*

Consider the role of stories in nurturing NI. The logic of good reasons poses questions that apply to any narrative. Theoretically, stories are a particularly apt opportunity to practice applying narrative rationality. First, as with any narrative, whether to accept communication as a basis for belief or behavior is determined by the logic of good reasons. Whether a scientific theory makes a practical difference in one's life is dependent upon its coherence, its fidelity, and its pragmatic value. Stories are no different, except that stories use the same logic internally as well. In contrast, the internal logic of a scientific theory is the logic of reasons. In other words, it proves itself within a more Apollonian framework before a more subjective evaluation decides what to do about it. With stories, however, the logic of good reasons applies to the characters as well as the audience.[116]

A Storied Idea.

> *We live in stories the way fish live in water, breathing them in and out, buoyed up by them, taking from them our sustenance, but rarely conscious of this element in which we live.*
>
> – Daniel Taylor, *The Healing Power of Stories*

Two definitions of story were already offered. Haven's definition is "a detailed, character-based narration of a character's struggles to overcome obstacles and reach an important goal" that is intended to impact the receiver.[117] For Bruner, "a 'story' (fictional or actual) involves an Agent who Acts to achieve a Goal in a recognizable Setting by the use of certain Means. What drives the story, what makes it worth telling, is Trouble: some misfit between Agents, Acts, Goals, Settings, and Means . . . The action then unfolds leading to a breach, a violation of legitimate expectancy. What follows is either a restitution of initial legitimacy or a revolutionary change of

116. Bruner suggests we know much less about narrative because it is mentally harder to attend to both levels of analysis simultaneously (Bruner, *Actual Minds, Possible Worlds*, 14). Advanced Narrative Intelligence eases these mental gymnastics.

117. Haven, *Story Proof*, 2007.

affairs with a new order of legitimacy. [Stories] (truth or fiction) end with a coda, restoring teller and listener to the here and now, usually with a hint of evaluation of what has transpired."[118]

The theory of NI offers this definition of story: *A type of narrative, with implications for the audience, conveying why and how one or more characters struggle in order to prevail in a particular setting*. This definition includes the same elements as the previous two, and grounds these elements in both evolutionary psychology and the theories of storytelling and literature:

1. *A type of narrative . . .* : As already defined, narrative implies sequence and meaning.

2. *. . . with implications for the audience . . .*: In technical discourse, meaning should be explicit. In stories, the degree of explicitness is a matter of artistic choice: how much to reveal, when, and how. In addition to the storyteller's intentions, however, the audience will always generate their own meanings, because all patterns are presumed to have meaning. Furthermore, all communication suggests some purpose for its expression. According to Turner, even stories with narrow settings and no explicit attempts to represent anything beyond its confines will be interpreted as "projecting to a much larger abstract narrative, one that applies to our own specific lives, however far our lives are removed from the detail of the story . . . however unyieldingly specific in its references, [stories] can seem pregnant with general meaning."[119]

3. *. . . conveying why and how one or more characters . . .*: As social animals, we are very attuned to other agents or, in stories, entities given human-like qualities. Our "theory of mind" ensures that the patterns our pattern-seeking mind most crave are the patterns surrounding other minds.

4. *. . . struggling . . .*: "Conflict is the engine that drives excitement in a story," according to Haven.[120] The struggle may be against some force, against themselves, or against each other. The challenge may be a challenge to group norms, to the characters' skills, or to the characters' expectations. How characters handle the mental, physical, emotional, or social dangers (really, how we evaluate their handling of these physical risks and psychological surprises) provokes emotions in the audience. It is these emotions that matter more to our minds than facts and logic.[121]

5. *. . . to prevail . . .*: The term implies success, but *to prevail* has the advantage of not necessarily implying finality. Additionally, the character's struggle is always a struggle to *realize* an *advantage*. In this sense, realize means either intellectual awareness, practical creation, or both. Advantage is always relative, but relativity can be in relation to oneself and others or a comparison of one's condition across time.

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118. Bruner, *Culture of Education*, 94-5. Bruner borrows liberally from Kenneth Burke's 1969 *A Grammar of Motives*, in which Burke labels the first five elements as the "story pentad."
119. Turner, *The Literary Mind*, 7.
120. Haven, *Story Proof*, 42.
121. Haven, *Story Proof*, 76.

6. . . . *in a particular setting*.: The level of detail in a story is like the level of detail on a map: there should be enough positional information to determine whether the map is relevant (i.e. whether the story is "lifelike"), but not so much as to be burdensome. A story should establish the physical and psychological terrain with enough clues, but still leave space for the audience to actively participate in the visualization of the setting.

These elements of story—socialness, settings, surprise, struggle, and emotional intensity—all arise directly from our evolutionary background. We are social animals enmeshed in a world of subjective values, contextual truths, complex relationships, and symbolic communication. In other words, we have literary minds not because literature structures our thinking, but because our thinking structures our literature—and all other forms of communication.

The Story Spectrum. The introduction briefly mentioned the confusion between narratives and stories. In terms of this thesis, the two are distinct. Narration is any communication with sequence and meaning. Stories are narratives with the elements outlined above. Stories that have more open-ended patterns, that invite active mental participation in the story (or the story's continuation), or that provide for identity are not narratives, but stories on a broader scale. In other words, they are less particular, less determined, and more exportable. When the military talks about strategic *narratives*, they technically mean strategic *stories*. These are the tools of persuasion at the far end of the political spectrum: unarmed politics.

Islamic extremists are an oft-used example of strategic storytellers who increasingly pose security challenges. Scott Atran, writing in *Talking to the Enemy*, describes how sacred values follow a moral logic different from the values of the marketplace or *realpolitik*.[122] Instead of rational actors, these strategic stories nurture *devoted* actors who act on the basis of identity and values instead of the logic of consequences.[123] This comports exactly with the theory of NI and the power of stories. Unsurprisingly, other authors, like Emile Simpson and William Casebeer, explicitly call for greater storytelling skills for strategists in order to combat the sacred fictions of violent jihadists.

In contrast, some stories are so basic they barely fulfill the definition. "I walked home," for example is a simple spatial event. With a large dose of implied, but mundane, meaning, this too constitutes a story. Yet, it does little to catch or hold attention, and offers little in the way of good reasons. This is the story version of a simple addition problem in math: the form is conventional, utility and clarity are maximized, and the value is minimal.

122. Atran, *Talking to the Enemy*, xiv.
123. Atran, *Talking to the Enemy*, 393.

In between these extremes are what most would intuitively identify as stories.[124] The rest of the thesis refers to stories in this middle zone. The range is expansive. Stories apply to the most objectively possible report (legal testimony, ideally) to history (Thucydides' *History*) to historical fiction (Tolstoy's *War and Peace*) to speculative fiction (Card's *Ender's Game*). By virtue of our evolutionary past—that is, our innate Narrative Intelligence—all of these stories have some potential to improve the thinking and communication appropriate for a Dionysian world. *A wicked world needs stories.*

NI, Stories, and the Dionysian. I have posited the following themes thus far: the Dionysian image offers a greater perspective than the Apollonian image; Narrative Intelligence is an appropriate paradigm of thinking and communication that acknowledges both mythological images and their importance, relative to each other; NI can contribute to encouraging innovation; and part of NI is telling stories, listening to stories, and thinking in terms of stories. The crux of the thesis now hangs on another proposition: *NI can be encouraged by engaging stories*.

Where is the Logic of Good Stories? Before describing another subset of the NI theory, an omission requires clarification. Narratives have a logic, the logic of good reasons. Technical narratives are also subject to the logic of reasons, guided by the puzzle-solving paradigms of normal science for that field. Likewise, stories have a logic as well, as does literature (the subset discussed next). As with each particular branch of science, each genre of stories has its own conventions by which they are judged. Like technical theorem, this is the domain of experts. The focus here, however, is honing the Narrative Intelligence we all have naturally. Therefore, although literature (specifically science fiction) will serve as an example of how a particular work can be used to nurture NI, literary theory is explicitly ignored.

The Fiction of Fiction.

> *Art does not generally drive people towards a particular conclusion. It enables thoughts and feelings around a shared object—the work of art—in a way that offers multiple possibilities of understanding . . . [to] put to the audience some circumstances, and ask what do* you *think?*
>
> – Keith Oatley, *Such Stuff as Dreams*

> *The novel's spirit is the spirit of complexity. Every novel says to the reader: 'Things are not as simple as you think.' That is the novel's eternal truth, but it grows steadily harder to hear amid the din of easy, quick answers.*
>
> – Milan Kundera, *The Art of the Novel*

124. This is akin to Supreme Court justice Potter Stewart's vague description of pornography: "I know it when I see it" (Jacobellis v. Ohio, 1964).

Fiction is expected to do many things, according to Joshua Landy. In *How to do Things with Fiction*, Landy identifies at least thirteen different functions.[125] Even though only one focuses on finding the educational message within a fictional work, this perspective is often the most dominant.[126] He attributes this to a "long-term campaign of misinformation, relentlessly persuading would-be readers that fictions are designed to give them useful advice."[127] Indeed, this campaign is symptomatic of Plato's influence: a clear sequence to a pre-determined, universal message is quite Apollonian. It is mechanical transmission instead of organic emergence.

Mining a fiction not only limits the potential of fiction, it may have negative consequences: "if truths are what one is after, fictions are the wrong place to start. Citizens who have been trained to seek messages in fiction, and conditioned to trust what they 'learn' there, will pick up a lot of misleading, conflicting, and unsubstantiated theories, while in the meantime they are prevented from gaining access to what is actually on offer."[128] Elsewhere, Landy highlights that "anyone who can be converted to a view by a fiction can be converted *out* of it by a fiction. If the *The Iliad* is enough to talk me into setting honor above life, then *The Odyssey* will be enough to talk me into doing the reverse."[129] There is a story for every purported value. Hence, while the Dionysian is about change, there is some value in a degree of principled obstinacy. Landy is clearly not the only scholar to make this argument. In *Men at* War, Chris Coker warns: "We should not read any work of literature to find a moral. The true use is to develop and nurture one's inner self, and this is best achieved by throwing oneself into the inner world of the characters the great writers portray, many of whom are as real, and often more vital, intelligent and captivating, than the great majority of people we will meet in real life. If is we, ultimately, who must determine whether war can be justified in any or all circumstances, and we are much more likely to arrive at some intelligence judgment than if we just follow the news, or adapt a quasi-ideological position."[130]

The Apollonian perspective values fiction as either a frivolous distraction or a conduit for moral education. Yet, there is a middle ground our Narrative Intelligence exploits naturally, and, if we hone our NI, also somewhat consciously.

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125. Landy, *How to Do Things with Fictions*, 4-8.
126. Landy, *How to Do Things with Fictions*, 8.
127. Landy, *How to Do Things with Fictions*, 3.
128. Joshua Landy, "Formative Fictions: Imaginative Literature and the Training of the Capacities," *Poetics Today* 33, no. 2 (Summer 2012): 201.
129. Landy, *How to Do Things with Fictions*, 36-7.
130. Coker, *Men At War*, 12.

The Valuable Value of Fiction.

> *Literature is an extension of life not only horizontally, bringing the reader into contact with events or locations or persons or problems he or she has not otherwise met", but also "vertically, giving the reader experience that is deeper, sharper, and more precise than much of what takes place in life.*
>
> – Martha Nussbaum, *Love's Knowledge*[131]

Fiction has the potential to be formative. Particular works and particular readers (and even particular readings by the same person) will expand or impinge that potential, which can take many forms. The opportunity can take many forms. The NI theory proffered in this thesis is incomplete because it will only focus on a handful of formative opportunities that are germane to encouraging heroic innovators. Also, just as NI is necessary, but not sufficient, for innovation, this list is not exhaustive.

What fiction can do to answer General Kwasts' charge is hone one's Narrative Intelligence, which includes two dimensions. The first is about performance: thinking creatively and communicating effectively in Dionysian contexts. The second is about perspective: an executive appreciation of how and why stories have this power. The argumentative structure of the thesis is thus complete: if fiction can enhance NI and NI can enhance innovative thinking, then engaging fiction in PME should contribute to innovation. This will require an innovation in PME, examined in the next chapter. Following that, *Ender's Game* is presented as a case study for what fiction can do in the classroom to encourage heroic innovators.

Even though the argument concludes with a fictional work as an illustration, these formative components are potentially present in any story. Story, again, is central to how we conceive of, and interact with, the Dionysian world (the world of people, of gaps, of novelty). So, improving how we think and communicate in that domain is a result that should not be surprising. Surprise, however, is precisely one of the reasons fictional works are valuable stories.

Stories exercise our mental and moral and social facilities. Like fish in water, we cannot escape this situation. Stories are to our mind what movement is to our bodies. While alive, we cannot not move; biological processes ensure some movement is always occurring. *Subconsciously, our minds are making sense of the world through internal stories.* Deliberate gross motor movements, such as walking, are not continuous, but certainly are useful for navigating our way around the world. *Our minds sometimes use stories deliberately to navigate through our social world.* Our bodies also need regular, though infrequent, bouts of intense

131. Nussbaum, *Love's Knowledge*, 48.

exertion. *Our minds do well to have intense experiences, as well.* Physically and mentally, the effects of intense, stimulative experiences persist. Thus, what running can do for our bodies, fiction can do for our mind.

Fiction as Superstimulus.

> *This is why fiction is so important—it renders fact back to itself in sharper and shapelier tones . . . great art can make the real more real.*
>
> – Christopher Coker, *Men at War*

According to Brian Boyd, fiction provides a "superstimulus by focusing on intense experience and concentrated change. These not only hook attention but rouse emotion, which in turn amplifies memory."[132] What attracts human attention is pattern, but familiar patterns do not hold our attention. "Great fiction," according to Bruner, "proceeds by making the familiar and the ordinary strange again" and "rescues" the world from a sense of blatancy.[133] Exaggeration, change, and complexity can all contribute to challenging our pattern-seeking mind by upsetting our contingent models and forcing us to reconcile contradictions. Hence, "works of fiction, rather than providing new ways of thinking, sometimes lead us to places of obscurity . . . provid[ing] a context in which we can think fruitfully about the conceptual issues raised."[134] For example, in the *New Testament*, Jesus is constantly using stories not to simplify, but to take a clear message (e.g. the Parable of the Sower in Mark 4:1-25) and "render it incomprehensible."[135]

Here is how another literary scholar, Louise Rosenblatt, describes this issue: "the artist is concerned not with indirect commentary on life but with the addition of a new experience in life."[136] In her work, *Literature as Exploration*, she goes on to write, "A great work of art may provide us the opportunity to feel more profoundly and more generously, to perceive more fully the implications of experience, than the constricted and fragmentary conditions of life permit."[137] Literature, as a form of art, "provides a *living through*, not simply *knowledge about*" regardless of attention to formal elements of literary theory.[138] Fictional stories are like thought experiments,

132. Boyd, *On the Origin of Stories*, 193.
133. Bruner, *Making Stories*, 9; Bruner, *Actual Minds, Possible Worlds*, 24.
134. Eileen John, quoted in Landy, *How to Do Things with Fictions*, 167.
135. Landy, *How to Do Things with Fictions*, 45-7.
136. Rosenblatt and Booth, *Literature as Exploration*, 28-9.
137. Rosenblatt and Booth, *Literature as Exploration*, 37.
138. Rosenblatt and Booth, *Literature as Exploration*, 38, 44.

which, according to Richard Dawkins, "are not supposed to be realistic. They are supposed to clarify our thinking about reality."[139]

The Original Virtual Reality Game.

> *A theory need not be a positive doctrine, a sort of* manual *for action . . . the more it proceeds from the objective form of a science to the subjective form of a skill, the more effective it will prove in areas where the nature of the case admits no arbiter but talent . . . It is meant to educate the mind of the future commander, or, more accurately, to guide him in his self-education, not to accompany him to the battlefield.*
>
> – Carl von Clausewitz, *On War*[140]

Humans are endowed with Narrative Intelligence: how we think and communicate and adapt is predominately by, with, and through stories. Stories can do this, in part, because they provide "an ancient virtual reality technology that specializes in simulating human problems."[141] And unlike flight simulators or video games, the mind does not make an initial distinction between sensory cues received directly from our environment and those received as images (generated internally or imported from stories).[142] These vicarious experiences then combine with first-hand experiences to generate theories about ourselves, others, and how to prevail in the world around us. The theory of NI is a call to make this process more deliberate using fiction as a forum for experimentation and personal development.

Like Clausewitz's caution about theory and Landy's lamentation about literature, we must not look at stories as manuals for action, but as opportunities to hone our minds. Whether the story if fictional or factual, the contextual nature of our Dionysian world means the experience (and the lessons derived from it) will never play out again in exactly the same way. The crux is to balance presumption of continuity with a healthy dose of humility. The Apollonian has privileged the former over the latter, and thus we should rebalance our expectations towards what stories can reliably offer—cognitive practice. As a superstimulus, fiction is a chance to examine what we do automatically for any communication. Fiction is an opportunity to enhance awareness of how we react to stories and how we expect others to react. As we gain fluently in these operations, our NI increases, taking on a more executive perspective of an otherwise unconscious habit.

139. Boyd, *On the Origin of Stories*, 194.
140. Clausewitz, *On War*, 141.
141. Gottschall, *The Storytelling Animal*, 59.
142. Card, et al, *Ender's World*, 21.

Readers as Writers.

> *Fiction is not just a slice of life, not just entertainment, not just escape from the everyday. It often includes these but, at its center, it is a guided dream, a model that we readers and viewers construct in collaboration with the writer which can enable us to see others and ourselves more clearly.*
>
> – Keith Oatley, *Such Stuff as Dreams*

We automatically evaluate communication based on coherence and fidelity. The logic of good reasons is a more formal checklist for teasing out a story's integrity and its implications. Navigating the list of questions comfortably is a step towards greater NI. Another is asking *why* those answers were given. For example, stories (to varying degrees) allow the audience to fill in missing information and even to reinterpret the story's implicit meanings. According to Bruner, this invites a reader to "become a writer, a composer of a virtual text in response to the actual."[143] An advanced reader reflects upon how he filled those gaps and how that shaped his assessment of the story's value. For example, was there a rush to discard contradictory elements of the plot or an acceptance of paradox and tension? Another executive skill is tuning into one's own emotional state before, during, and after the reading and then asking how that affected the story's reception (or the current evaluation of that evaluation). Finally, a reader with high NI will ask what his level of confidence is in all of these answers. Other introspective questions exist, but these instances offer a sense of how NI can be actively applied to a story to "clarify yourself to yourself."[144]

Engaging fiction also encourages awareness of the outer world. Two potential insights deal with speculation and with surprise. Addressing the second, Bruner describes any story as: "a recounting of human plans gone off the track, expectations gone awry. It is a way to domesticate human error and surprise. It conventionalizes the common forms of human mishaps into genres—comedy, tragedy, romance, irony, or whatever format may lessen the sting of our fortuity. Stories reassert a kind of conventional wisdom about what can be expected, even (or especially) what can be expected to go wrong and what might be done to restore or cope with the situation."[145] In other words, stories can "domesticate unexpectedness" and "increase our tolerance for ambiguity."[146] Even though the details may be fabricated, our mind still registers the pattern without a strong association between fact and fiction, as long as the narrative is both

143. Bruner, *Actual Minds, Possible Worlds*, 24.
144. Posner quoted in Landy, *How to Do Things with Fictions*, 38.
145. Bruner, *Making Stories*, 31.
146. Bruner, *Making Stories*, 90; Simmons and Lipman, *The Story Factor*, 242.

coherent and fidelitous.[147] Hence, stories—which, by definition, involve some breach in expectations—can help us anticipate surprise and change in our own lives. It can also better equip us for creatively constructing change ourselves.

The requirement for verisimilitude means that fictions are grounded in a world of sufficient familiarity. Yet, stories must also "render that world newly strange."[148] The result, in Bruner's words, can "tempt us into thinking of alternatives beyond it . . . In the end [fiction] has the power to change our habits of conceiving what is real, what is canonical."[149] As the reader becomes writer, the objective is to wander into the Dionysian realm of possibilities, instead of probabilities; to wonder less about predicting trends and more about finding new questions to ask; to catalyze creativity. Indeed, using the natural reaction of our pattern-seeking mind, one can juxtapose two wildly divergent images and the brain will use abductive logic to craft some connection.[150]

Mind Reading.

> *If the first dimension of leadership is the art of fiction, the second is the craft of rhetoric.*
>
> – Paul Bate, *Strategies for Cultural Change*

Fiction has the potential to enhance our self-awareness: understanding how we interact with both stories and the world those stories symbolize. Likewise, NI allows us to increase our awareness of how others do the same. First, consider our innate proclivity for creating mental models of other people's models. This theory of mind is exercised in stories (which all include characters as a central element). This is especially true when we are presented with complex characters. We automatically construct a story about a character's interior processes: what the character is thinking, feeling, aiming for, and so on.[151] We perform the same calculations in the real world, but the fictional world is less predictable and yet also more controllable, in a sense (i.e. we can pause and reflect between pages).[152] According to Zunshine, literature stimulates the same capacity used in actual social situations, even when readers are aware that the characters are

147. Haven, *Story Proof*, 68.
148. Bruner, *Actual Minds, Possible Worlds*, 24.
149. Bruner, *Making Stories*, 94.
150. Martin, *Opposable Mind*, 144.
151. Autism, which is characterized by impaired of theory of mind capacity, is also associated with a "lack of interest in/capacity for fiction and storytelling" (Zunshine, *Why We Read Fiction*, 7-9).
152. David C. Kidd and Emanuele Castano, "Reading Literary Fiction Improves Theory of Mind," *Science* 342 (October 2013): 378.

fictional.[153] The ability to empathize with another people has obvious advantages for leaders, like General Kwast, trying to nudge organizational culture.

Honing NI, however, requires a different, but related, operation. Like evaluating one's evaluation of a story using the logic of good reasons, we can employ our theory of mind to anticipate and evaluate another's evaluation of a story. In other words, applying the same executive critique described above to someone else's assessment of a fictional work: what values do they identify and why? Or, elevate the level of analysis again and evaluate both one's own self-evaluation and how well you anticipated another's evaluation. These exercises are obviously easier to cultivate in a forum where engagement, reflection, and dialogue are already expected. PME is such an environment.

Improving the ability to grasp the ideas and values of others is a crucial leadership skill. Yet, to be effective, that comprehension must be converted into a useful instrument for persuasion. In other words, as NI increases from an unconscious habit to a deliberate tool, as the reader becomes a writer and then a mind reader, the reader also becomes a storyteller. The stories can then open the audiences' minds by provoking them, by surprising them, by inviting them to be co-creators in a narrative of playful and inspirational speculation. This can be a culture of heroic innovation, made all the more necessary, and all the more likely, by the Dionysian forces of change and complexity.

Conclusion

> *Man—let me offer you a definition—is the storytelling animal. Wherever he goes he wants to leave behind not a chaotic wake, not an empty space, but the comforting marker buoys and trail signs of stories. He has to keep on making them up. As long as there's a story, it's all right. Even in his last moments, it's said, in the split second of a fatal fall—or when he's about to drown—he sees, passing rapidly before him, the story of his whole life.*
>
> – Graham Swift, *Waterland*

> *No other habit of thought lies so deeply within the soul of a small creature trying to make sense of a complex world not constructed for it.*
>
> – Stephen Jay Gould, *The Flamingo's Smile*

The theory of NI provides a conceptual rationale for the value of stories, but researchers have accumulated empirical evidence as well. The bibliographies in Oatley's *Such Stuff as Dreams* and Haven's *Story Proof* are full of studies and Appendix B consolidates some of their most relevant conclusions. To explain why stories are so powerful, researchers proffer reasons

153. Zunshine, *Why We Read Fiction*, 10.

ranging from story's function as a "mnemonic device for complex concepts" to story's ability to be more motivational, more contextual, or more relevant than other narrative forms.[154] The theory of NI asserts that the explanation is simple: we are storytelling animals. And we are such because we are designed for metaphorical thinking and cognitive play—the same "combinatory play" Einstein suggested is the "essential feature in productive thought."[155]

Despite this growing body of studies, few of them explore linkages between stories and innovative culture. Scores of writers, however, have made such claims based on their own experiences and theories. Others link stories to organizational culture and then link organizational culture to innovation. In this thesis I draw upon these ideas to expand this aspect of NI theory and provide a reasonable hypothesis for the central research question, whether fiction can encourage heroic innovation.

Encouraging subsumes two processes. The first is cultivation. One premise of this work is that at least three skills are important for innovation: advanced cognition, moral courage, and effective communication. This chapter demonstrated how engaging stories, particularly fictions, can contribute to each. First, stories exercise our ability to generate new mental models that help us navigate both our physical and social environments. Moreover, they attune us to the need to consider a variety of perspectives and to continuously regenerate new models—traits that are considered integral to "the innovator's DNA."[156] Second, like writers, we must *develop our characters*: evaluating ourselves on the basis of coherence and fidelity, i.e. internal integrity and faithful representations of reality. While never abandoning a degree of humility, innovators must ensure their good ideas are "driven into practice with courageous impatience."[157] The most fundamental ideas, of course, are to keep reflecting and to keep asking penetrating questions. This includes questioning one's self to understand one's own cognitive limits, prejudices, motives, and paradigms. Third, stories are natural vectors into others' minds. They are all the more so when employed by a storyteller with a sharpened theory of mind.

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154. Simmons and Lipman, *The Story Factor*, 125; Haven, *Story Proof*, 108-9, 100.

155. Greenspan and Benderly, *The Growth of the Mind*, 20.

156. Jeff Dyer, Hal Gregersen, and Clayton M. Christensen, *The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators* (Boston: Harvard Business Review Press, 2011), 27, 49. Indeed, the other behaviors this work endorses are also ones privileged in the Dionysian perspective: incessant questioning, empirical experimentations, humble observations, and nurturing diverse and novel connections between people and ideas.

157. Rickover quoted in Oliver, *Against the Tide*, 40.

In sum, innovation in a Dionysian world requires a balance between centrifugal and centripetal forces; a balance between continuity and change. Thinking and communicating as a storyteller offers an image for how to find that balance: *Narrative Intelligence encourages innovation by cultivating appreciation and employment of these personal and interpersonal skills.* High levels of NI produce thinking and communication appropriate for Dionysian phenomena *and* an appreciation of how pervasive those phenomena are for the challenges that really matter. Innovation is one of those challenges. Thus, encouragement also captures the importance of ennobling; transforming innovation into a heroic endeavor. Stories can do this as well, which is the topic of the next chapter.

Table 1: F. Scott Fitzgerald's *Tender is the Night*

"This land here cost twenty lives a foot that summer. See that little stream—we could walk to it in two minutes. It took the British a month to walk to it—a whole empire walking very slowly, dying in front and pushing forward behind. And another empire walked very slowly backward a few inches a day, leaving the dead like a million bloody rags. No Europeans will ever do that again in this generation."

"Why, they've only just quit over in Turkey," said Abe. "And in Morocco—"

"That's different. This western-front business couldn't be done again, not for a long time. The young men think they could do it but they couldn't. They could fight the first Marne again but not this. This took religion and years of plenty and tremendous sureties and the exact relation that existed between the classes. The Russians and Italians weren't any good on this front. You had to have a whole-souled sentimental equipment going back further than you could remember. You had to remember Christmas, and postcards of the Crown Prince and his fiancée, and little cafés in Valence and beer gardens in Unter den Linden and weddings at the mairie, and going to the Derby, and your grandfather's whiskers."

"General Grant invented this kind of battle at Petersburg in sixty-five."

"No, he didn't—he just invented mass butchery. This kind of battle was invented by Lewis Carroll and Jules Verne and whoever wrote Undine, and country deacons bowling and marraines in Marseilles and girls seduced in the back lanes of Wurtemburg and Westphalia. Why, this was a love battle—there was a century of middle-class love spent here. This was the last love battle."

"You want to hand over this battle to D. H. Lawrence," said Abe.

"All my beautiful lovely safe world blew itself up here with a great gust of high explosive love," Dick mourned persistently.

Source: Francis Scott Fitzgerald, Tender Is the Night (Wordsworth Editions, 1995), 40.

Chapter 3

Educators as Heroes: Resolving the Paradox of Innovation by Innovating Education

> *Machines don't fight wars. Terrain doesn't fight wars. Humans fight wars. You must get into the minds of humans. That's where the battles are won.*
> – Colonel John Boyd, *A Discourse on Winning and Losing*

> *It seems that storytelling and story understanding is at the core of intelligence . . . The point at which information is transformed into wisdom is the place at which knowledge and intelligence requires storytelling skills (both listening and telling).*
> – Annette Simmons, *The Story Factor*

This thesis began with General Kwast's transformative vision for Air University: encouraging heroic innovators. The research question is whether that encouragement can come from stories, specifically fiction. Inspiration for that idea came in part from the Thucydides' account of Pericles. Facing war with Sparta, he convinced Athens to reject the Homeric paradigm of close quarter combat and instead adopt a strategy no other Greek city-state had ever attempted. His innovative approach, one of strategic withdrawal instead of decisive battle, also required a new story of heroism based on restraint and patience; a focus on communal values instead of individual glory.[1] He offered this vision in speeches, including one in which he exclaimed "we have no need of a Homer to praise us."[2] His example is illustrative both because it demonstrates the type of creative thinking and rhetorical prowess that Plato would soon vilify and because he used his oratory skills to reshape the definition of heroism. Can fiction encourage similar attempts? That is, can fiction improve our ability to think and communicate and can those skills then be used to expand heroism to include innovators?

According to the theory of Narrative Intelligence, the answer is yes. Chapter two described the mental benefits of *engaging stories*. It also concluded stories are possibly the most

1. Kagan, *Pericles Of Athens*, 230-1. For example, Paris the adulterer is the only major character in *The Iliad* that uses a bow and is chastised by others for it, as when the character Idomeneus states, "My way is not to fight my battles standing far away from my enemies" (Robert L. O'Connell, *Of Arms and Men: A History of War, Weapons, and Aggression* (New York: Oxford University Press, 1990), 48.).

2. Thucydides, *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War* (New York: Free Press, 2008), 2.41.4.; Kagan, *Pericles Of Athens*, 144.

powerful tools "to motivate, or to teach and communicate factual, conceptual, and tacit information."[3] That is why educators are resuscitating the maligned art of storytelling for law, medicine, education, leadership, and even computer science.[4] As outlined in the last chapter, some are even applying the concepts of narrative rationality and storytelling to military strategy and operational design.[5] Stories can also help the military solve another problem—the paradox of innovation.

Innovation in military organizations is paradoxical because the need to innovate is high, but so is the resistance to change. One element of resolving this paradox is to use stories to cultivate greater appreciation of innovators within an organization (whereas the last chapter was more about cultivating the innovators themselves). Stories that honor the creativity and courage of innovators can help lower organizational biases against novelty and encourage others to attempt new ideas. This goes beyond any particular innovation. Indeed, if strategy is aimed at manipulating the parameters of a contest, then *strategic innovation*—a meta-innovation that cultivates a culture oriented towards innovation—is the crux of resolving the paradox. The challenge of changing the culture of a military organization is complex and this thesis covers just one element, Professional Military Education.

The point is that PME should itself be innovated to integrate the wisdom of sophistry. In order to generate some ideas about transforming PME, the chapter starts with key concepts from existing theories of military innovation. The second section explains how ennobling innovators reduces the inertia inherent in war fighting organizations. Then examples are proffered to demonstrate how definitions of heroism changed with previous innovations. The role of stories is highlighted in the instance of one particular innovation, the airplane. Lastly, the chapter concludes with some concepts to transform educators into heroic, strategic innovators.

Theories of Military Innovation

Before arguing that military education should employ the skills of sophistry to help resolve the paradox of innovation, a sketch of applicable terms and theories is required. First,

3. Kendall Haven, *Story Proof: The Science Behind the Startling Power of Story* (Westport, Conn: Libraries Unlimited, 2007), vii-viii.

4. For more, see Denning's *Narrative Intelligence*, Joseph Badaracco's *Questions of Character*, Bruner's *Making Stories*, Coles' *The Call of Stories*, or Julian Bleecker's "Design Fiction."

5. Again, notable authors include Tadd Sholtis (*Military Strategy as Public Discourse*), Huba Wass de Czege (numerous articles), Emile Simpson (*War from the Ground Up)*, William Casebeer (*Military Force and Culture* Change), and Lawrence Freedom (*Strategy).*

innovations are significant improvements in the organization, training, doctrine, technology, or strategy for war fighting.[6] These categories are not mutually exclusive. Innovations arise only after an idea or invention is sufficiently developed and adapted.[7] This is a systemic process with many, diverse components operating in dynamic, multilayered networks. An idea is not an innovation until it achieves this system-wide influence.

Scholars debate whether the evolution of the system is determined primarily by the technological artifacts or by socio-cultural factors or some combination of the two. At one extreme, technological determinism argues that technologies drive innovation. Social constructivism, on the other hand, denies this independent, emergent quality. Instead, technology is embedded within a social context that determines the shape and impact of an invention. Although this chapter focuses on stories to shape organizational culture, it avoids choosing between determinism, constructivism, or a more moderate version of either (e.g. soft determinism or Thomas Hughes' technological momentum).[8] Even in the hard case of determinism, this ambivalence is justified because the supposed irreversible and inevitable emergence of an artifact can be facilitated by social factors (i.e. technology does not determine *when* innovation occurs). Additionally, determinism generally addresses the consequences of a technology after it is developed, while remaining silent on this chapter's focal point: ennobling those who create and develop the initial ideas.[9]

Many scholars have studied innovation in military affairs and have offered a variety of conclusions. Based on global trends since 1000 AD, William McNeil's *The Pursuit of Power* claims market forces and interstate competition ignited innovations in warfare. Barry Posen's

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6. Major innovations can apply to the entire service or to functional subcomponents within a service but, contrary to Rosen, do not necessarily focus on a major weapons system. Rosen's contrast with tactical innovations ("which is a change in the way individual weapons are applied too the target") is still valid. (Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca: Cornell University Press, 1994), 7.)

7. While Hughes continues to chart this evolution beyond adaptation in his chapter "The Evolution of Large Systems," this chapter's focus starts after the creation of an idea in someone's mind and stops once the changes appear less subversive to the status quo.

8. Lynn White provides an example of soft-determinism: "As our understanding of the history of technology increases, it becomes clear that a new device merely opens a door; it does not compel one to enter. The acceptance or rejection of an invention, or the extent to which its implications are realized if accepted, depends quite as much upon the condition of a society, and upon the imagination of its leaders, as upon the nature of the technological item itself" (Lynn White, *Medieval Technology and Social Change* (New York: Oxford University Press, 1964), 28).

9. Merritt Roe Smith and Leo Marx, eds., *Does Technology Drive History?: The Dilemma of Technological Determinism* (Cambridge: MIT Press, 1994), x.

The Sources of Military Doctrine concludes military organizations avoid innovation until civilian leaders, responding to domestic and international politics, force militaries to innovate. Owen Reid Cote's dissertation, "The Politics of Innovative Military Doctrine," demonstrates innovation resulting from competition between US services. Finally, in *Winning the Next War*, Stephen Rosen studies how competition within military organizations leads to innovations in both war and peace.

The case for innovation in PME is framed within specific conditions outlined in these studies. In contrast to McNeil, the argument shares the shorter time horizon of Cote, Posen, and Rosen. Unlike Cote, the focus is not interservice but intraservice.[10] Next, Posen's admission that organizational theory can sometimes describe innovation better than political considerations is relevant since PME has only indirect impact on international relations.[11] Additionally, to the extent education has normal rates of personnel turnover and no direct measurement of effectiveness, PME adheres to Rosen's description of innovation. In those circumstances, successful innovators—levering the Dionysian image of creative change—sense a new security environment. This emergent condition, in turn, necessitates two adaptations. First, a new concept of operations is needed and this concept must be translated into operational tasks. Second, qualified leaders must be attracted to the new concept and promoted when they succeed in its newly created functions.[12] In other words, where McNeill perceived the centrality of market incentives, operating beyond the command of any one authority, military services establish an internal market wherein advancement in rank replaces direct financial incentives.

Rank confers benefits. Thus, officers can be viewed as entrepreneurs competing for promotions by selecting which organizational concepts and tasks will most likely bring success. In this context, success is defined by achieving the organization's mission and doing so via means valued by the organization's culture. Rosen posits that innovation in those missions and means

10. Technically, major elements of PME are directed by the Chairman, Joint Chiefs of Staff and by legislation, but services often enjoy wide latitude on how to apply those directives.

11. Because innovations are systemic, the separation of the military from political or commercial influence is never absolute. Rosen, however, asserts military innovation is "coherent" enough to make this theoretical assumption, even if organizational theory is incomplete (Rosen, *Winning the Next War*, 5). Also note there have been times when legislators did force reform upon military schools because of the national security implications of their flaws (e.g. Ike Skelton's Panel on Military Education).

12. Rosen, *Winning the Next War*, 75, 96.

occurs only if enough leaders of sufficient quality can be attracted and promoted to alter organizational values.[13]

A central premise of this chapter is that promotion is not the only draw. Another attraction is how much the organizational culture ennobles the new endeavor and those who embrace it. Like Pericles, militaries can glorify those who take risks on behalf of others, which contradicts the individual gains of Homer's warriors or McNeill's entrepreneurs. For example, in one argument for enthusiastically adopting the amphibious mission, a US Marine Corps officer cited the "glory" of "those who strike the first blows at the enemy."[14] The service's ethos served as part of the justification for the innovation. Notably, the author reached the pinnacle of the Marine Corps just four year later.

Ennoblement helps overcome the inertia inherent in military organizational culture. A military service is a "political community" that struggles over resources but also, more fundamentally, over ideology and values.[15] Like all organizations, there is a fundamental bias towards solutions that have seemingly worked well enough in the past and against the inherently subversive nature of innovation.[16] Military organizations, suffused with "uniforms," "regulations," and "standard operating procedures," are particularly vulnerable to such Apollonian inertia.[17] Yet, like the USMC example above, innovations do occur.

13. Note the circular causality: highly qualified men and women must receive assurances their chances for promotion will not decrease in order to not dissuade them from the new system; the new system needs to attract such high performing personnel to transform a concept into tasks and to perform those tasks well; and those highly-qualified officers are already on the path to higher rank, enhancing their influence over future promotions and the ability to assure promotion opportunities are not curtailed.

14. Timothy Moy, *War Machines: Transforming Technologies in the U.S. Military, 1920-1940* (College Station: Texas A&M University Press, 2001), 105.

15. Rosen, *Winning the Next War, 20*.

16. Wiebe E. Bijker, Thomas Parke Hughes, and T. J. Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Anniversary edition (Cambridge: MIT Press, 2012), 13.

17. Gareth Morgan, *Images of Organization* (New York: SAGE Publications, Inc, 2006), 16-7; William Hardy McNeill, *The Pursuit of Power: Technology, Armed Force, and Society Since A.D. 1000* (Chicago: University of Chicago Press, 1984), 131; Rosen, *Winning the Next War*, 2.

The Evolving Character of Heroes

> *Heroes tended to be warriors, and their stories recounted how they defended the tradition against physical threat. As traditions began to wither in the face of rational criticism in the modern era, new kinds of social heroes emerged [to face] dilemmas that were conceptual and cultural rather than physical and violent, and these dilemmas were far more complicated. Inevitably new social heroes emerged in popular stories, heroes who were not warriors. Think of heroes of politics like Ghandi and Roosevelt, heroes of business like Carnegie and Gates, heroes of ideas like Einstein and Freud, and so on . . . the idea of the hero has become vastly more complicated. So warrior heroes, in turn, have become more problematic, as their traditional methods of physical resolution have come to seem more questionable. Warrior heroes are still prevalent, but as threats to the social order become more abstract, it is far less clear what fighting skills can accomplish or even should accomplish . . . the modern role of the warrior hero has taken on interesting and unexpected dimensions.*
>
> – Will Wright and Carl Pletsch, "War, Terrorism, and the Hero" [18]

> *We might well be mistaken if we believed that heroism can be manifested only in situations where physical perils are faced. We can conceive a kind of hero whose being is dominated by the virtue of wisdom rather than courage.*
>
> – James Cook, "Reproaching the Military Hero San Peur" [19]

Part of the rationale for amphibious operations was getting closer to the fight faster and in more places. Many innovations create the opposite effect, such as Pericles' strategic innovation of withdrawing into the city walls. Likewise, some technological inventions increase the separation between the solider and the target. Organizations sometimes resist these new methods of warfare, regardless of their effectiveness, because they do not comport with their conceptions of heroism. For example, French armies of the Middle Ages exhibited what historian A. T. Hatto called a "noble prejudice" against archery, despite repeatedly witnessing its destructive power.[20] McNeill describes a similar bias against the advancements in artillery.[21] The concept of heroism is malleable, however.

When technological inventions challenge the definition of heroism, the evolution from idea to innovation is threatened. Obstacles to attracting human capital must be overcome and this

18. Will Wright and Carl Pletsch, "War, Terrorism, and the Hero: A Special Feature," *War, Literature, and the Arts* 17, no. 1-2 (November 2005): 20.

19. James L. Cook, "Reproaching the Military Hero San Peur," *War, Literature, and the Arts* 17, no. 1-2 (November 2005), 99.

20. Rick Fields, *The Code of the Warrior in History, Myth, and Everyday Life* (New York: Harpercollins, 1991), 312; Roger Trinquier, *Modern Warfare: A French View of Counterinsurgency* (Westport: Praeger Security International, 2006), 90.

21. McNeill, *Pursuit of* Power, 172-3.

is not merely an issue of ensuring promotion opportunities. It is also a function of ennobling the new approach and those courageous enough to embrace it. One mechanism for changing attitudes, demonstrated by the example of Pericles and corroborated by experts in organizational theory, is to craft a convincing story. Edgar Schein's *Organizational Culture and Leadership* identifies stories as an "embedding mechanism" for organizational values.[22] In *Strategies for Cultural Change*, Paul Bate similarly offers a metaphor of the "leader as rhetorician," implanting ideas into stories that resonate emotionally and intellectually (i.e. *logos*, as originally conceived).[23] Like the cognitive advantages of engaging fiction, it does not even matter if the story is fictional. For instance, consider another invention that separated the warrior from the war, even as stories embraced him in "noble fictions," the airplane.

Airplanes represent another example of technological invention that changed who qualified to be a hero. In fact, rapid progress in military aviation necessitated constant alterations in the definition of heroism, invoking what David Mindell labels a "*contingent* heroism."[24] Consider how those technological advancements transformed aerial combat. In the First World War, engagements occurred in close range, by pilots aiming weapons intuitively, against aircraft acquired visually, in machines that were dangerous to fly in any conditions. Compare the finesse and courage required then, with the task of employing modern fighters, in which a network of sensors acquires enemies well beyond visual range and then automatically calculates targeting cues. The mission now depends less on physical prowess and more on the cognitive agility to simultaneously perform checklists, manage switches, and create a mental representation of the three-dimensional battlespace. Despite those differences, the concept of heroism has continuously expanded and it has done so, in part, through stories.

In the introduction to *The Great War in the Air*, John Morrow writes, "Air warfare is exciting, heroic, and dramatic, and it seems to posses an intrinsic hold upon our imagination."[25] He goes on to cite the great volume and enthusiastic tone of stories told about pilots in both print

22. Edgar H. Schein, *Organizational Culture and Leadership*, 4th edition (San Francisco: Jossey-Bass, 2010), 256.

23. Bate, *Strategies for Cultural Change*, 257-8, 29-32. If stories are crafted by leaders and formal leaders are those who have been promoted, this too is connected, albeit indirectly, with the centrality of promotions in peacetime innovation.

24. David A. Mindell, *Iron Coffin: War, Technology, and Experience Aboard the USS Monitor*, updated edition (Baltimore: Johns Hopkins University Press, 2012), 146.

25. Morrow, *The Great War In The Air*, xiv.

and speech.[26] For instance, in a wartime address, British statesman David Lloyd George celebrated aviators as "the knighthood of the war, without fear and without reproach. They recall the old legends of chivalry, not merely the daring of their exploits, but by the nobility of their spirit, and amongst the multitudes of heroes, let us think of the chivalry of the air."[27] Similar sentiments captured the public's attention—and the attention of airmen—through the interwar years, through the Second World War, and beyond. For example, US Air Force recruiters explicitly employed the phrase and imagery of "aerial knights" during the Korean War.[28] The thrilling tales of dueling jets over MiG Alley were celebrated in the press and later in books and movies.[29] Modern fighter pilots are still celebrated in popular culture and highly valued in US Air Force culture.[30]

Some foresee, and even celebrate, a shift away from this situation.[31] Whether this ennoblement is deserved or desirable is not the point, however. In fact, Steven Fino's dissertation, "Flying Scientists or Flying Knights?," points out that actual aerial combat never coincided with the romantic imagery. Yet, the power of stories preserved the heroic myth. Stories cultivated a broader notion of heroism to account for the shift from physical tasks to mental tasks.

In a similar fashion, the US Air Force has attempted to foster a sense of pride among career fields that rely upon cognitive superiority, but are not subject to physical danger. Air University held a symposium in 2009 to discuss the evolving definition of "operator."[32] The title is conferred upon those performing operations (sometimes just special operations) and insinuates

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26. Robert Wohl's *A Passion for Wings*, makes a similar argument, citing L. Driggs' *Heroes of Aviation* (1918) and Anthony Adair's novels as examples. Joseph Corn's aptly named *Winged Gospel* argues America even had a "love affair" with aviation.

27. Dominick A. Pisano, Thomas J. Dietz, and Joanne M. Gernstein, *Legend, Memory, and the Great War in the Air* (Seattle: University of Washington Press, 1992), 29. In fact, hundreds of fighter pilots were knighted by their nations (O'Connell, *Of Arms and Men*, 262).

28. Steven A. Fino, "Flying Knights of Flying Scientists?" (PhD diss., Massachusetts Institute of Technology, 2014), 89.

29. Fino, "Flying Knights of Flying Scientists?", 300-1. Two examples are the 1956 book *The Hunters* and the movie it inspired.

30. For example, consider the move "Top Gun" and the documentary "Red Flag." Support for the rise and continued prominence of fighter pilots in the Air Force, see Michael Worden's *Rise of the Fighter Generals*.

31. For example, see Jeffrey Smith's *Tomorrow's Air Force*.

32. David Johnson and Brian Landry, co-chairs, "Future Operator Symposium Proceedings," *Air Force Symposium Series 2010-3* (Maxwell AFB: Air University Press, 2010). Ironically, the term operator entered the military lexicon as a reference to more mechanical means of fighting, which was less dependent upon physical courage and skill.

a degree of significance and danger. The AU report, however, offered definitions based on technical expertise, cognitive agility, and decision making in "complex, volatile, and dynamic environments."[33] This reflects the introduction, two years earlier, of an Airman's Creed that proclaimed everyone as a warrior.[34] The heated debate over a new medal for aircrews of Remotely Piloted Aircraft (RPA) and the general issue of how RPAs fit into Air Force culture prove these efforts have not been wholly successful.[35]

Ennobling personnel who generate innovative ideas is an even bigger challenge, since there are no physical risks and no direct operational contributions. Yet, Air Force organizational culture already has a historical precedent of valuing a new breed of heroes—those completely separate from combat, yet whose abilities to imagine novel solutions to new problems and then courageously and persuasively convey those ideas—whose contributions were worthy of praise and admiration.

In his book, *The Development of Air Doctrine in the Army Air Arm*, Thomas Greer describes the work of the Air Corps Tactical School (ACTS) as the "heroic age of doctrinal development."[36] ACTS launched in 1920 to provide a mid-level officers an opportunity to engaged in an intensive, nine-month study of air power issues.[37] The students and faculty "frankly questioned and invited academic disagreement with all doctrine."[38] Their story is regularly told in Air Force PME, which claims to be the descendent of ACTS. The plot, however, focuses more on their doctrine of strategic bombing and the potential decisiveness of air power. Instead, this should be a story about innovation on the battlefield that originated with creativity in the classroom.

33. Johnson and Landry, "Future Operator Symposium Proceedings," 9.

34. Air Force Doctrine Document 1-1, *Leadership and Force Development*, 8 November 2011, 21.

35. Dave Blair, "Ten Thousand Feet and Ten Thousand Miles: Reconciling Our Air Force Culture to Remotely Piloted Aircraft and the New Nature of Aerial Combat," *Air and Space Power Journal* 26, no. 3 (May-Jun 2012); Miguel Morris, et al., May 1, 2012 (10:16 a.m.), comment on Dave Blair, "Ten Thousand Feet and Ten Thousand Miles," http://www.airpower.maxwell.af.mil/article.asp?id=72. The theory of NI suggests that storytelling may be more convincing than simply providing statistics about operational contributions of RPA crews.

36. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 14.

37. Clodfelter, *Beneficial Bombing*, 52.

38. Robert F. Futrell, *Ideas, Concepts, Doctrine*, 88.

Meta-Innovation

> *Culture that can absorb change without breaking does so through the meditation of a "forum" for revising itself: institutions and rituals for considering alternatives . . . education is one institution and storytelling is one of the techniques; not a model of education as transferring information from those who have it to those who lack it but rather an invitation to active participation in deciding what is preserves and what is altered.*
>
> – Jerome Bruner, *Actual Minds, Possible Worlds*

> *Stories are not a symptom of culture, culture is a symptom of storytelling.*
>
> – K. E. Weick and L. D. Browning, *"Argument and Narration in Organizational Communication"*[39]

Encouraging storytelling requires an innovation itself—an innovation in force development. Developing the force is an enterprise-wide endeavor but organizational theorists point to the importance of leveraging formal education. This brings the argument to PME. While some argue "education is the engine of military innovation," Air Force culture has not valued the educational mission or those who dedicate themselves to it.[40] One author surmised that, "in our fly-and-fight culture, it is 'unmanly' to develop one's intellect."[41] A former general officer bluntly stated, "I am a professional fighter pilot, and getting a PhD is a nice thing to do, but it has nothing to do with flying and fighting."[42]

Innovation in Air Force PME will proceed as other peacetime innovations have done. First, there is a perceptible change in the environment. The reality of financial austerity and complex security challenges is one such shift. General Kwast cited these changes as he called for Air University to produce heroes of innovation. Another shift is the narrative turn.

Given the fundamental importance of stories in cultivating a group's fitness, it should not be surprising that organizational culture can be influenced by stories. Indeed, some of the oft-cited authors in this work are interested in storytelling primarily as a leadership tool.[43] For

39. Bate, *Strategies for Cultural Change*, 260.

40. Stephen Chiabotti, "Pensive Sword: Educating Officers in Austere Times," *Strategic Studies Quarterly* 8, no. 3 (Fall 2014), 31. Harold Winton offers a similar argument in *The Challenge of Change.*

41. Edward C. Mann, *Thunder and Lightning: Desert Storm and the Airpower Debates* (Maxwell AFB: Air University Press, 1995), 194.

42. Olsen, *John Warden and the Renaissance of American Air Power*, 118.

43. The literature on storytelling and leadership is also more expansive than the cognitive impacts of stories described in the last chapter.

example, Mary Boyce summarized the results of over 125 studies, concluding: "Stories create a sense of community, effectively share values and attitudes, build camaraderie, build culture, promote interaction, communicate management priorities and philosophy, share knowledge and information, etc. Research explicitly shows that, within organizations: stories are useful for new member socialization and generating commitment; stories are an effective vehicle for social control; stories provide and define meaning within the organization culture and structure; and familiarity with dominant organizational stories is an indicator of adaptation."[44]

Stories contribute to a sense of community, a sense of shared values and *common sense*. We naturally crave these patterns for the information they reveal and the sense of order they confer. Indeed, the original metaphor for organizations was the rational, predictable, controllable image of a machine.[45] Yet, in this thesis I have also emphasized that stability creates stagnation: growth requires disruption.

Organizational innovation is a paradox because any organization's culture is about preserving what works. It presumes continuity in its problems and hence continuity in the group's proven solutions. How, then, can we expect any organization to embrace change? If culture is about continuity, how do we nurture a culture of continuous innovation? In short, the answer is Narrative Intelligence.

Obviously, to the degree stories shape culture, than the greater storytelling skills that come from greater NI are important (e.g. celebrating past innovations). Additionally, all the individual traits that an organization needs its members to exhibit in order to be an innovative organization are the same as those gained from engaging stories: mental agility, executive perspectives, humility, and experimentation.

What needs to become more explicit is NI's embrace of the Dionysian. Indeed, innovative ideas are inherently disruptive, nonlinear, and judged on based on the logic of good reasons. The meta-innovation prescribed here elevates this to a new level by establishing an expectation of unexpectedness; by holding contradictory ideas in creative tension. Well-developed NI, with its proficiency in multilayered and contingent interpretations, invites reconstruction of meanings and expects ideas to be presented as fictions.

44. Haven, *Story Proof*, 112.
45. Morgan, *Images of Organization*, 15.

Conclusion

> *There is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things. For the reformer has enemies in all those who would profit by the old order, and only lukewarm defenders in all those who would profit by the new order . . . [because of] the incredulity of mankind, who do not truly believe in anything new until they have had actual experience of it.*
>
> – Niccolo Machiavelli, *The Prince*

> *What an opportunity . . . as a nation, to do something like this, right now . . . our future is going to require some heroes and those heroes are going to come from the halls of this auditorium . . . It is up to you, it is your moment in time, it is your opportunity to leave a lasting destiny on future destinations.*
>
> – General Stephen Kwast, *Commander's Call*

Innovation in Professional Military Education is a *strategic* innovation that can help resolve the paradox of military innovation. One way PME can accomplish this is through the power of stories, particularly stories that contribute to an overarching theme that illustrates the need for innovation in the face of new problems; that portrays the value of considering novel solutions for those problems; and that ennobles those who are creative and critical enough to produce those new ideas. Military educators have a fundamental responsibility to cultivate this *cognitive domain* and hence, their mission is also heroic.

Pericles could justly proclaim that Athenians had no need of Homer to praise their new vision of heroism. Military educators should proclaim they have no need of Plato to dissuade them from *their* new vision of heroism. It is not just a story *about* heroic innovators, but also a story about the heroic *storytellers* themselves.

The next chapter delves specifically into the idea of heroism, and offers a specific story for educators to use as they teach NI though NI.

Table 2: "The Kingdom of Heaven" Movie Script

The setting is twelfth century Jerusalem. The crusader noble, Balian, is hurriedly checking siege preparations along the city walls as the patriarch of the Jerusalem approaches him.
Patriarch: "We must quit the city . . . We have not enough knights."
Balian: (furious) "Truly?"; (turning to a peasant boy) "What is your condition?"
Patriarch: "That is my slave!"
Balian: (to the boy) "Kneel!" (to the crowd) "Every man of arms or capable of bearing them, kneel!" (the boy kneels then the others all kneel, except for the Patriarch who is aghast)
Balian: (to the crowd of kneeling men and boys) "Be without fear in the face of your enemies. Be brave and upright, that God may love thee. Speak the truth even if it leads to your death. Safeguard the helpless. That is your oath . . . Rise a knight."
Patriarch: (visibly disturbed) "Does making a man a knight make him fight better?"
Balian: "Yes."

Source: William Monahan, "The Kingdom of Heaven." The Daily Script, accessed 21 April 2015, http://www.dailyscript.com/scripts/The_Kingdom_of_Heaven.pdf, 112-4.

Chapter 4

Heroic Adventures and *Ender's Game*

> *The unity of human life is the unity of a narrative quest. Quests sometimes fail, are frustrated, abandoned or dissipated into distractions; and human lives may in all these ways also fail. But the criteria for success or failure in a human life as a whole are the criteria of success or failure in a narrated or to-be-narrated quest.*
>
> – Alasdair MacIntyre, *After Virtue*

In a world that is doubly wicked, military innovation is both necessary and difficult. In other words, complexity and competition make adaption imperative, but perplexing. To encourage innovation, organizations must nurture cognition, moral courage, and communication, while also ennobling the cultivation and employment of those skills. Narrative Intelligence contributes to both tasks. Since NI can be deliberately honed, and since AU has been charged with creating heroic innovators, Air Force OPME should consider adding NI to its curriculum requirements. Although there are many ways to enhance NI, there is significant support for the approach I advocate in this thesis: reading, reflecting on, and discussing fiction.

Not all fiction is equally useful for this purpose. According to Fisher, the "most compelling, persuasive stories" are those that follow mythic forms.[1] Since the most universal mythology revolves around heroes, and since heroism relates directly to General Kwast's vision, this suggests using a story with an archetypical hero. This chapter discusses why *Ender's Game* fulfills this criterion, and offers many other reasons it may be useful for encouraging heroic innovation in PME.

The Monomyth

> *The rise and fall of civilisations in the long, broad course of history can be seen largely to be a function of the integrity and cogency of their supporting canons of myth; for not authority but aspiration is the motivator, builder, and transformer of civilisation. A mythological canon is an organisation of symbols, ineffable in import, by which the energies of aspiration are evoked and gathered toward a focus.*
>
> – Joseph Campbell, *Creative Mythology*

1. Fisher, *Human Communication as Narration*, 76.

The Apollonian perspective views stories as entertainment, instead of as aids to enlightenment. The overly rational view of the world, dismissive as it is of fictitious stories, is particularly dismissive of mythology.

Mythology can be defined as a body of stories explaining a group's history or customs. Myths, however, have a quality that is less manufactured and more reflective of the group's core paradigms. In other words, on the paradigmatic spectrum, myths are closer to what some call narratives, and further from puzzle-solving). Joseph Campbell, one of the most acclaimed experts on the subject, offered a vigorous defense of the value and utility of myth as "a rich and eloquent document of the profoundest depths of human character."[2]

According to Campbell, myths reveal the deepest meanings of life. They meditate between what is local and particular for the group, with what has been universal for humanity. They privilege pragmatic wisdom over decontextualized data.[3] By preserving the "long-inherited, timeless universe of symbols," myths fulfill a pedagogical function, offering a pattern for ritualized growth.[4] Authentic growth involves a metamorphosis. The transition can be frightening and, moreover, failure looms ever present at this seam of destruction and creation. To navigate the challenge of transformation, cultures have traditionally used rituals. Rites of passage are enactment of myths meant to offer explanation and assistance for the process.[5]

Throughout human history, mythologies are similar, not only in purpose, but in form as well. Campbell's decades of research revealed that the religions and myths of humanity are more convergent than divergent.[6] A central theme, what he labeled the monomyth, is the hero's journey.

The Hero's Journey

> *A hero ventures forth from the world of common day into a region of supernatural wonder: fabulous forces are there encountered and a decisive victory is won: the hero comes back from this mysterious adventure with the power to bestow boons on his fellow man.*
>
> – Joseph Campbell, *The Hero with a Thousand Faces*

2. Campbell, *The Masks of God, Vol. 4*, 256.
3. Joseph Campbell and Bill Moyers, *The Power of Myth* (New York: Anchor, 1991), 3-5, 8-9.
4. Joseph Campbell, *The Hero with a Thousand Faces*, 3rd edition (Novato: New World Library, 2008), 387; Campbell and Moyers, *The Power of Myth*, 31-2.
5. Campbell and Moyers, *The Power of Myth*, 82; Campbell, *The Hero with a Thousand Faces*, 10.
6. Campbell, *The Hero with a Thousand Faces*, viii.

Campbell identified a number of common stages in monomyths: the adventure begins with the (future) hero's separation and ends with the hero's return. In between, the hero must prove his or her mettle in a series of trials. Subplots, summarized below, are associated with each of the phases: the departure, the initiation, and the return. Note that some commentaries have modified the stages, but only one such alteration is useful here: the addition of a prerequisite stage, the hero's *miraculous birth*.[7] Also, not every story of the hero's journey follows this order or contains each component. Indeed, such a rigid formula would contradict what we know about human nature: effective stories balance pattern and surprise.

The departure of the proto-hero separates him from his current situation. It may be mental or physical or both. The *call to adventure* can occur in a variety of ways: by a chance opportunity, by a foreboding herald, or possibly by some natural transition point (e.g. puberty). According to Campbell, "the familiar life horizon has been outgrown; the old concepts, ideals, and emotional patterns no longer fit; the time for the passing of a threshold is at hand." Sometimes, the hero resists or ignores the call in order to seek comfort in the familiar and the fixed (the *refusal of the call*). The hint of mysterious new possibilities, however, creates an "irresistible fascination" that overwhelms the desire for control and stability.[8] The call is often mediated by *supernatural aid*. A protective figure or guardian, typically an old man or woman, signifies a reservoir of support. If perceived at all, the nature of the assistance is typically misunderstood. The aid seems to represent yet another source of danger.[9]

Finally, after hearing and honoring the call to adventure, the penultimate phase of the departure is *crossing the first threshold*. The hero has reached some limit in his present state. Beyond this "life horizon" is "darkness, the unknown, and danger."[10] The only way to enter this ambiguous and volatile realm is to let go of the past: to surrender old ideas, to purge oneself of old beliefs, to submit old values to new questions. The crossing is figuratively or literally a death of one's old self without foreknowledge of how—or if, or when, or why, or in what form—one will be reborn.[11]

The *belly of the whale* is the final act of separation, accepting the onset of transmutation. According to Campbell, "The idea that the passage of the magical threshold is a transit into a

7. David Adams Leeming, *Mythology: The Voyage of the Hero*, 3rd edition (New York: Oxford University Press, 1998), 47.
8. Campbell, *The Hero with a Thousand Faces*, 52-6, 59-60.
9. Campbell, *The Hero with a Thousand Faces*, 51-5.
10. Campbell, *The Hero with a Thousand Faces*, 69, 72-3.
11. Campbell, *The Hero with a Thousand Faces*, 77, 82.

sphere of rebirth is symbolized in the worldwide womb image of the belly of the whale . . . The hero, instead of conquering or conciliating the power of the threshold, is swallowed into the unknown and would appear to have died. This popular motif emphasizes that the passage of the threshold is a form of self-annihilation. Instead of passing outward, beyond the confines of the visible world, the hero goes inward, to be born again. The disappearance corresponds to the passing of a worshipper into a temple—where he is to be quickened by the recollection of who and what he is, namely dust and ashes unless immortal . . . The devotee at the moment of entry into a temple undergoes a metamorphosis. Once inside he may be said to have died to time."[12]

The second phase, initiation, describes how the hero handles the *road of trials* on the other side of that threshold. Campbell portrayed this new environment as a "dream landscape of curiously fluid, ambiguous forms . . . a succession of trials [and] only the beginning of the long and really perilous path of initiatory conquests and moments of illumination."[13] Any victories, are merely "preliminary, unretainable ecstasies, and momentary glimpses" of what the journey may bring.[14]

The trials typically culminate in *the meeting with the goddess,* which is how Campbell described the crux of the journey. The goddess, both feminine and supernatural, represents the power to create and the power to destroy. The hero grapples with this power and emerges from the ultimate test humbled, his old self destroyed. His new self now emerges and unites with the latent power of this mysterious world.[15]

This new way of seeing the world presents a challenge in itself. Sometimes the hero is overcome by a sense of revulsion at the world he left or, more precisely, at the mismatch between reality and perceptions. Campbell called this *woman as the temptress*, using the image to represent the temptation for the hero to ignore his new awareness and instead try to recapture, and indulge in, his previous ignorance. To continue the journey, however, the hero cannot ignore the divergence between what is now painfully obvious to him and what remains hidden to others.[16]

The next step is *atonement with the father*: confronting the figure with the ultimate power in the hero's life. The challenge is realizing that the separation of the world into dual spheres, metaphorically represented by one's parents, is a false dichotomy. The richness of life comes

12. Campbell, *The Hero with a Thousand Faces,* 90.
13. Campbell, *The Hero with a Thousand Faces,* 97.
14. Campbell, *The Hero with a Thousand Faces,* 109.
15. Campbell, *The Hero with a Thousand Faces,* 109, 115-6.
16. Campbell, *The Hero with a Thousand Faces,* 123.

from embracing paradoxical dualities ("death and life, pain and pleasure, boons and deprivation") and tacit knowledge (which "can never be quite explained").[17]

What follows is *apotheosis* or deification of the hero, who has now achieved a state of internal unity. Campbell used the yin-yang image to represent the contrary, yet complementary, forces brought together in the character.[18] Indeed, this is about *character* development: from integration, the hero achieves integrity; her actions and words match her values and priorities. Having achieved *the ultimate boon*, the hero's sense of service and integrity naturally point to the final element of the heroic triad: returning.

Like the initial call to adventure or the realization of the world's imperfections, sometimes the hero resists. The *refusal of the return* is often fueled by a doubt that the insights gained could be adequately communicated to others. "When the hero-quest has been accomplished . . . the adventurer still must return with his life-transmuting trophy. The full round, the norm of the monomyth, requires that the hero shall now begin the labor of bringing the runes of wisdom . . . back into the kingdom of humanity, where the boon may redound to the renewing of the community . . . But the responsibility has been frequently refused."[19]

Without such temptations or having overcome them, the hero begins the *magic flight* back to the original world. It is also challenging. Often the hero must again rely upon others to prevail over the obstacles blocking his return.[20] The assistance may come from the same supernatural guardians that supported the journey's initiation. In some stories, a *rescue from without* is necessary: "The hero may have to be brought back from his supernatural adventure by assistance from without. That is to say, the world may have to come and get him. For the bliss of the deep abode is not lightly abandoned in favor of the self-scattering of the wakened state . . . And yet, in so far as one is alive, life will call. Society is jealous of those who remain away from it, and will come knocking at the door. If the hero . . . is unwilling, the disturber suffers an ugly shock; but on the other hand, if the summoned one is only delayed—sealed in by the beatitude of the state of perfect being (which resembles death)—an apparent rescue is effected, and the adventurer returns."[21]

17. Campbell, *The Hero with a Thousand Faces*, 136, 145-8.
18. Campbell, *The Hero with a Thousand Faces*, 152-3.
19. Campbell, *The Hero with a Thousand Faces*, 193.
20. Campbell, *The Hero with a Thousand Faces*, 196.
21. Campbell, *The Hero with a Thousand Faces*, 207.

Next, the hero faces *the crossing of the return threshold*. Having returned, he faces a different set of challenges: "paradoxical, supremely difficult threshold-crossing of the hero's return from the mystic realm into the land of common day . . . where men who are fractions imagine themselves to be complete . . . to confront society with his ego-shattering, life-redeeming elixir, and take the return blow of reasonable queries, hard resentment, and good people at a loss to comprehend."[22] The "ultimate difficult task," according to Campbell, is to communicate the hero's insight into something coherent for those with a narrower conception of the world, a more restricted paradigm. An analogy is trying to represent a three-dimensional form on a two-dimensional surface. He also described this as the challenge of taking a form, which is physically and mentally manageable, and interpreting its complex, multi-dimensional meanings.[23]

Once the hero is able to bridge the inner and outer domains, he has become *master of the two worlds*. "Freedom to pass back and forth across the world division," Campbell wrote, "from the perspective of the apparitions of time to that of the causal deep and back—not contaminating the principles of the one with those of the other, yet permitting the mind to know the one by virtue of the other—is the talent of the master . . . It is possible to speak from only one point at a time, but that does not invalidate the insights of the rest."[24] He went on to note, "The individual, through prolonged psychological disciplines, gives up completely all attachment to his personal limitations, idiosyncrasies, hopes and fears, no longer resists the self-annihilation that is prerequisite to rebirth in the realization of truth, and so becomes ripe, at last, for the great at-one-ment. His personal ambitions being totally dissolved, he no longer tries to live but willingly relaxes to whatever may come to pass in him; he becomes, that is to say, an anonymity."[25]

The final stage, the product of such a tumultuous and extraordinary journey, is the *freedom to live*. The hero is now liberated from the false dichotomies of the world: yin and yang, light and dark, the individual and the universal, permanence and change, order and chaos, life and death.[26] The hero is now prepared to realize the "ultimate aim" of her journey: "wisdom and power to serve others."[27] To achieve this state, the hero has sacrificed herself, maybe literally, but always metaphorically: the old self has died to be reborn, transformed, into a new *being*;

22. Campbell, *The Hero with a Thousand Faces*, 216.
23. Campbell, *The Hero with a Thousand Faces*, 218.
24. Campbell, *The Hero with a Thousand Faces*, 229.
25. Campbell, *The Hero with a Thousand Faces*, 236-7.
26. Campbell, *The Hero with a Thousand Faces*, 238-9, 243.
27. Campbell and Moyers, *The Power of Myth*, xv.

thinking anew, seeing anew, acting anew.[28] The hero then also serves as a warrior. However the myth characterizes the hero's identity, her service is then to crusade against those outside of her particular group.[29] The divisions may be drawn along tribal, ethnic, racial, national, or ideological lines.[30] Or, the warrior may be fighting to replace a conservative thinking with flexibility, creativity, and growth:

> The dragon to be slain by him is precisely the monster of the status quo: Holdfast, the keeper of the past. From obscurity the hero emerges, but the enemy is great and conspicuous in the seat of power; he is enemy, dragon tyrant . . . The tyrant is proud, and therein resides his doom. He is proud because he thinks of his strength as his own; thus he is in the clown role, as a mistaker of shadow for substance; it is his destiny to be tricked. The mythological hero, reappearing from the darkness that is the source of the shapes of the day, brings a knowledge of the secret of the tyrant's doom . . . The hero-deed is a continuous shattering of the crystallizations of the moment. The cycle rolls: mythology focuses on the growing-point. Transformation, fluidity, not stubborn ponderosity, is the characteristic of the [hero warrior] . . . Briefly, the ogre-tyrant is the champion of the prodigious fact, the hero the champion of creative life.[31]

In this quote, and in many other areas of the Campbell's writings, there are obvious connections between the archetypical hero and the innovator. The next section highlights some of these links before turning to *Ender's Game*.

The Hero and the Innovator

> *The agony of breaking through personal limitations is the agony of spiritual growth Art, literature, myth and cult, philosophy, and ascetic disciplines are instruments to help the individual past his limiting horizons into spheres of ever-expanding realization. As he crosses threshold after threshold, conquering dragon after dragon, the stature of the divinity that he summons to his highest wish increases, until it subsumes the cosmos. Finally, the mind breaks the bounding sphere of the cosmos to a realization transcending all experiences of form—all symbolizations, all divinities: a realization of the ineluctable void.*
>
> – Joseph Campbell, *The Hero with a Thousand Faces*

This thesis revolves around General Kwast's call for *heroic* innovators. Fusing the image of heroism with innovation is not simply a premise based on his charge to Air University,

28. Campbell and Moyers, *The Power of Myth*, 123.
29. Campbell, *The Hero with a Thousand Faces*, 156.
30. Campbell, *The Hero with a Thousand Faces*, 162.
31. Campbell, *The Hero with a Thousand Faces*, 337.

however. The archetypical hero's adventure has direct connections to the same skills that encourage innovation: advanced cognition, moral courage, and deft communication.[32]

Cognition. Cognition includes both knowledge and the wisdom to apply it. For the purposes of this thesis, this includes Narrative Intelligence, the Theory of Narrative Intelligence, awareness of the paradigmatic spectrum, the humility and agility to consider diverse perspectives (or metaphors), and an appreciation of both Dionysian and Apollonian images.

The monomyth describes the hero's transformation. Sometimes, the journey is represented literally as travelling to somewhere new and back. It is always, however, primarily about how the hero perceives the world, about breaking habitual ways of thinking, and about a new relationship with what constitutes "truth." *Hubris* and attachment to order or control, therefore, are often obstacles to growth. Mastery is marked by the willingness and ability to switch perspectives and appreciate the disadvantages of assuming any one view. The hero's adventure is about realizing the transformative potential in disorder, destruction, and danger. There is never a purely rational explanation, but the hero naturally perceives *good reasons* to continue the narrative.

Moral Courage. Transformation is difficult and the hero's courage is tested throughout. Again, the myth often portrays the need for physical courage, but the underlying lesson is still about the journey within: the decision to face one's limits, to question one's beliefs, to question the morality of one's behavior. This takes moral courage, since disorder is disorienting, disconcerting, and destabilizing. Yet, with these dangers also comes the opportunity to test one's integrity; to ensure decisions and actions are aligned with one's values.

In the monomyth, one cannot achieve a unity of character—integrity—without summoning moral courage at multiple points in the journey. At the beginning, heroes often resist relinquishing control and confidence in order to submit to a mysterious call. At the initiation of the adventure, trials are marks by ambiguity and confusion. At the journey's culmination, the transformation implies a duty that requires fortitude to communicate new and often unpopular insights.

Communication. Communication is about the ability to transmit and receive information. It is the application of Narrative Intelligence—crafting stories and metaphors that encode meaning

32. Again, in this thesis I do not claim these three skills are the only ingredients for innovation, nor do I claim to describe all aspects of the skills. Likewise, this framework is merely one possible way to organize the main currents of this argument.

into decipherable, intriguing patterns. It is also about learning as much as it is about teaching: increasing one's knowledge, honing one's theory of mind (about the speaker and about the speaker's subjects), and adding to one's repertoire of stories to guide future thought and communication.

The monomyth illustrates the need for skillful communication at multiple points in the hero's journey. The call to adventure begins when the future hero perceives a message, which may be delivered by intuition or by a supernatural guardian. The hero must then interpret the extraordinary message, a difficult task, given its mysterious origins or implications. Throughout the initiation, messages can clarify, but often complicate, the hero's task. Upon return, the hero's "ultimate difficult task" is to translate his insights, though tacit and seemingly paradoxical, in terms others can comprehend and use.

These examples have only addressed the internal elements of the hero myth. Each monomyth is a story formed for a particular purpose, which is also instructive for encouraging innovation. As Campbell explained, the hero adventure stories are used to transmit cultural truths, especially the appropriate purposes, paths, and patterns for transformative growth. The storyteller faces the same dilemma as the returned hero: how to inspire another to initiate the challenging journey without being able to fully explain the destination in rational terms; how to champion creativity and fluidity. What eases the challenge is our innate tendency to *not* require, or even look for, pure reason in our stories. Instead, if it exhibits coherence and fidelity, our Narrative Intelligence accepts the story as a basis for understanding and navigating the world. In other words, the story becomes fodder for our literary minds: another analogy in our metaphorical toolkit.

The monomyth offers two distinct insights. First, the image of the hero can be juxtaposed against one's own life: how can we develop, test, and employ our own *character* as the hero did (or failed to do)? The second requires a more executive perspective of what is occurring, akin to the lesson we *should* learn when our expectations are violated. Using Nassim Taleb's example of the black swan, the warning should not merely be that a member of the swan species can indeed be that color, but *that we should have greater humility regarding our expectations.* That is, as the Dionysian image promotes, our central expectation should be to have less confidence in our expectations. We should not be surprised by the existence of surprises. Likewise, the more fundamental insight of the monomyth is not the specific analogy but the pervasiveness and utility of analogies. Campbell described this in terms similar to Landy's

prescription for dwelling in metaphor or Morgan's mosaic of competing and complementary insights: since the power of myth is inaccessible to reason alone, "the function of ritual and myth is to make possible, and then to facilitate, the jump—by analogy. Forms and conceptions that the mind and its senses can comprehend are presented and arranged in such a way as to suggest a truth or openness beyond. And then, the conditions for meditation having been provided, the individual is left alone. Myth is but the penultimate; the ultimate is openness—that void, or being, beyond the categories—into which the mind must plunge alone and be dissolved."[33]

Ender as Hero

This section serves two purposes: it summarizes the story and uses this summary to argue that *Ender's Game* represents the archetypical hero's adventure. To begin, Ender's birth is special. By the time his parents get married, sometime in the distant future, there are significant changes to social policies. Card insinuates that the changes, including the prohibition against more than two children, have as much to do with population pressures as it does with the two wars Earth fought against an alien invasion almost a century earlier. The threat of a third invasion by the "buggers" has brought the normally warring states into a tenuous peace under a federated system.[34] The global government is responsible for security and only allows Ender to be born because he has the potential to met the stringent requirements for Battle School. His older brother, Peter, and older sister, Valentine, showed promise early on. While monitored via an internal device, however, they were disqualified for demonstrating too much aggression and too much empathy, respectively. His parents were allowed to have a disparagingly-titled "third," which would certainly be the end of their child-rearing opportunity (hence the nickname, Ender).

The story begins with six-year-old Ender presumably being rejected for the program. With his monitor removed, some of his classmates take the opportunity to pick a fight with him. Physically small and concerned for his safety, Ender catches the pack's leader off guard and knocks him down with a kick to the chest. Ender then proceeds to kick the boy (to death, unbeknownst to Ender) while issuing threats to the others. Frustrated at demonstrating the very anger he detests in Peter, he is initially inclined to accept the call to adventure.

Colonel Graff, the Battle School administrator, delivers the invitation. Graff, in fact, will accompany Ender throughout the story, as a guardian of sorts. He explains to Ender that the final test was seeing how Ender handled situations without the protection of an omnipresent authority.

33. Campbell, *The Hero with a Thousand Faces*, 258.
34. Orson Scott Card, *Ender's Game* (New York: Tor Science Fiction, 1994), 11.

Satisfied that he acted both mercilessly and with righteous intent, Graff offers him a position at the elite school. Ender expresses some reluctance to leave his family. Where this path will take him, and what it will entail, are shrouded in mystery. He only knows it will be long, it will be difficult, and it will change his life. He does not refuse the call for long, however.

Soon, Graff, Ender, and other new students are onboard a shuttle to the Battle School. Ender crosses a series of physical thresholds (from his house, into Graff's car, into the spaceship, out of Earth's atmosphere). Separation from his family, and from most of civilization, is a metaphorical death. Echoing the mythological descent into the underworld, Ender's first thought, while he waits in his seat for the launch, is imagining "the ship dangling upside down on the undersurface of the Earth . . . We are going to fall off this planet."[35] Ensconced in the shuttle and then the Battle School space station itself, the departure phase of the hero's journey is complete.

The bulk of the story occurs in the second phase of the monomyth, the initiation. The trials begin almost immediately. First, the shuttle flight forces him to shift his orientation: the floor is no longer down, because there is no "down" without the pull of gravity. This task is easy enough for the young genius, but Graff uses this as an opportunity to isolate Ender from the other students. By holding Ender as an exemplar and disparaging the others for not displaying similar mental agility, Graff initiates his strategy of placing Ender in opposition to everyone else. At multiple times in the Battle School, this results in physical aggression towards Ender. He passes each of these unofficial tests. On the flight out, for instance, he defensively pulls his tormentor's arm and throws him against a wall, injuring him.

Apart from the physical threats Ender will confront, there are mental challenges for him as well. Ender's academic courses are not taxing, but the Battle School education also includes a series of mind games. Some are played against other students. Ender quickly learns how to win, making him even less popular. Some are played against the computer. Instructors use these to assess their mental and emotional states. Ender becomes intrigued in one particular game, the Giant's Drink, in which players maneuver their avatar through ill-defined challenges as the computer adapts the game to each kid's psychological profile.

The central game of Battle School, however, is in the battleroom. After a few years, students from the initial launch group are divided amongst the many teams that compete as an army in these battleroom wars. Games occur in a zero gravity arena where the object is to breach the enemy's gate by maneuvering your own forces around obstacles, and by disabling the

35. Card, *Ender's Game*, 30.

opponent with lasers. The school uses the game to develop teamwork, leadership, and strategy. The students use the game to prove themselves to the instructors and to each other. All of them carefully track the statistics, which are prominently displayed. All of them know the rules *of* the game. The students also know the rules *about* the game, i.e. when to expect them (weekly), what to expect (two armies against each other), and who to expect will be promoted into armies and their leadership positions (based on performance in the battleroom).

When Ender is sent to an army almost two years early, it is a reflection of both his aptitude and Graff's plan to increasingly challenge him. It also further isolates Ender, who is treated as an outcast by his first commander. Ender is a quick learner, however, and takes every opportunity to hold his own informal practices in the battleroom. The only students that join him are from his original launch group. Not yet in armies, and willing to take any chance at preparing for the wars, they eagerly work with Ender to experiment and learn about battleroom tactics and strategies. One of his early revelations is the importance of asserting a common orientation in the arena: "the enemy gate is down."[36] Ender also quickly realizes the disadvantages of the precise formations the armies favor. Instead, he develops decentralized approaches that allow for initiative and creativity. As Ender moves between armies, and up into leadership positions, Graff and Major Anderson, his second-in-command, constantly increase the level of difficulty. As a commander, for example, Ender is given a newly assembled group and then assigned his first war with two months less preparation than normal. Ender's army, in fact, is assigned wars on a daily basis. His team wins every single battle, even though the instructors continuously impose new disadvantages (e.g. short notice or two armies against his one).

The challenges inside the battleroom only increase Ender's challenges outside the arena. Ender, although dominating the game in unprecedented ways, appreciates the game for what is, while most others perceive it as an end in itself. For some of them, Ender is not an asset for the future interstellar war—he is a threat to their personal success. When they catch him alone one day, their intent is clearly to hurt him enough so that he quits or is incapable to continuing. Similar to his earlier fights, Ender uses his wits to compensate for his lack of physical power. And similar to early fights, Ender causes more harm than he intends. Again, unbeknownst to him, the assailant dies. And again, he is tormented by how things transpired.

Between the games and this fight, Ender is at a physical, mental, and emotional breaking point. Just as he is promising to never play the game again, Graff delivers notification that Ender

36. Card, *Ender's Game*, 89.

has graduated. Not only is the transfer two years early, but he is also to skip the three years of Pre-Command school and enter Command School directly.

Ender's time at the Battle School culminates with victory: his army is undefeated, he has taken the Giant's Drink further than anyone knew it could go (instructors included), and he defended himself against a potentially fatal attack. He has harnessed forces of creation and destruction. In a way, he wishes to be destroyed himself. He cannot continue and instead of going to Command School, Graff brings him to Earth. Sequestered in a lake house, surrounded by mountains and immersed in the weightlessness of the water, Mother Earth serves as his temptress. Ender has no drive to continue the hero's journey, despite Graff's insistence that Ender may be the only hope to defend the very Earth that he has spent the last two months admiring.

Graff decides that Ender should meet with Valentine. While Ender has been in training, his siblings have used false on-line identities, and their own genius, to become influential on the internet forums that debate international politics. Peter initiated the project once he detected "a fundamental shift in the world order" and an opportunity to shape the security environment.[37] Their separate on-line characters are kept separate from each other, even while they become the dominant voice for their respective factions.

Despite hiding their true identities from everyone else, Graff uncovers their conspiracy to not only shape the conversation, but to achieve legitimate authority. He uses this as leverage to convince Valentine to see Ender, who only reluctantly agrees to see her. Valentine, who now better appreciates the importance of Ender's role in Earth's future, uses this as her leverage to convince him to continue his heroic journey. She succeeds and soon Ender is on his way to a distant base to continue his training at Command School.

The base, located inside a dark moon of Saturn, is even more suggestive of a descent into the underworld. Furthermore, Ender is even more isolated then ever. His only teacher is the hero who won the final battle of the last war, Mazer Rackham. Long thought a martyr, he has spent eight years travelling on a spacecraft near the speed of light, while fifty years passed on Earth. Taking advantage of the relativity of time was necessary to ensure he would be available to train the commander for the next war. This trick of slowing down time, along with his famous exploits and stealthy entrance, grants him a supernatural aura. He will now be Ender's mentor, although

37. Card, *Ender's Game*, 126.

he emphasizes a warrior's real education comes from the enemy. "I am your enemy from now on," Mazer proclaims.[38]

The first year of Command School is spent playing another game. This time it is a simulator that pits individual warships against each other, performing tactical engagements, and then advances to large operations requiring strategic management of each forces. Ender quickly learns how to defeat the computerized opponent, using the same intuition he used to quickly solve abstract mathematical problems: "Whenever he was given a problem that involved patterns in space and time, he found that his intuition was more reliable than his calculation—he often saw at once a solution that he could only prove after minutes or hours of manipulating number."[39]

As Ender advances, Mazer increases the complexity of the game. Now, Ender will act as the overall fleet commander and the individual fighters will be directed by other students, who Ender can communicate with through a headset. Only Ender has the overall perspective of the battle, and he employs his subordinate commanders as he had in the battleroom, allowing them to use their own judgment and initiative. The synergy of the team, all children he knew well from Battle School, will make them more effective in the games but the enemy has also become much more complex. Ender will no longer face off against a computer with limited imagination, but against an adaptive and creative force led by Mazer himself.

It was, in fact, Mazer's strategic intuition that led to the unexpected victory in the last context. The initial insight originated not from their limited understanding of the buggers' physiology, but a guess as to their psychology. Their species seemed to have evolutionary antecedents in insects. Their bodies resembled giant ants, so he reasoned that they may have social structures like ants, as well. It was already known they did not have any sensory organs to communicate as humans do. Mazer hypothesized they evolved to have a shared consciousness, centrally directed by the hive's queen. At that decisive battle, he saw a pattern that revealed the location of the queen. That is where he directed his small force, and, as if the enemy could not comprehend his audacity or the magnitude of their vulnerability, the queen was relatively easy to destroy. Without the Queen's mind, the force simply stopped fighting. When he showed Ender the video of the battle, he too could see the pattern. But they both knew the enemy would not likely make that mistake again. Indeed, because there would be no requirement for the queen to

38. Card, *Ender's Game*, 263.
39. Card, *Ender's Game*, 258.

be physically present in a battle, she could remain at some secure location and still direct the fleet.

For now, those directions would come from Mazer. The initial operations are easy victories for Ender, but Mazer promises him the battles will become harder. He is right. The students, however, continue to push themselves to the limit in an attempt to learn from every exercise and prepare for the next battle. Just like Battle School, Ender's team always comes out on top, though not always gracefully. Again, just like Battle School, Ender struggles against the unrelenting mental, physical, and emotional stress. Even in his dreams, Ender is tormented. Each night, the Giant's Drink is replayed in his mind as if it was not a game, but a real place. The settings are the same, except it is now populated with bugger families, whom he neither harms nor hates.

On the precipice of another breakdown, Ender is beckoned for his final examination. This will be the culmination of the hero's trials, although he does not yet know why. He only knows that he is despondent and frustrated with the games he has been forced to play for nearly half his life. As he waits for the game to begin, "he wished he could simply lose it, lose the battle badly and completely so that they would remove him from training . . . and let him go home . . . Then the enemy formation appeared and Ender's weariness turned to despair."[40]

Not only is there a new element to the exercise, the battle occurred around a planet, but he is vastly outnumbered—his 80 fighters to 5 or 10 thousand enemy ships. Ender's mind wanders to the unfair wars in Battle School. He only regains focus when one of the other tudents reminds him of his old mantra: "the enemy gate is *down*."[41] Ender reacts with a rare laugh, thinking, "It *was* funny. The adults taking all this so seriously, and the children playing along, playing along, believing it too until suddenly the adults went too far, tried too hard, and the children could see through their game. Forget it, Mazer. I don't care if I pass your test, I don't care if I follow your rules. If you can cheat, so can I . . . In that final battle in Battle School, he had won by ignoring the enemy, ignoring his own losses; he had moved against the enemy's gate. And the enemy's gate was down. If I break this rule, they'll never let me be a commander. It would be too dangerous. I'll never have to play a game again. And that is victory."[42] Ender directs his forces into a formation that resembles that final battleroom war. The formation then

40. Card, *Ender's Game*, 291-2.
41. Card, *Ender's Game*, 293.
42. Card, *Ender's Game*, 293.

does what Mazer "perhaps . . . cannot believe that I would do:" Ender sacrifices his fleet to destroy the planet itself.[43]

The plan works. The enemy disappears. The children cheer. Ender expects the opposite reaction from the adults gathered to observe his final test. Instead, they cheer even more heartedly than the students. Ender cannot understand why they are not angry, why Graff was shedding tears of joy, why Mazer offers his congratulations to his student. "You beat them," Mazer tells Ender. "I beat *you*," he replies.[44] Actually, what had seemed like preparations to defend against another invasion *was* the third invasion: "There were no games, the battles were real, and the only enemy you fought was the buggers. You won every battle, and today you finally fought them at their home world, where the queen was, all the queens from all their colonies, they all were there and you destroyed them completely. They'll never attack us again. You did it. You."[45]

Ender is hailed as a hero, yet he reacts with anguish. Like his other battles—not the games, but the physical fights—he struggles with what he has done. As much as it was the situation he was placed in, whether out of self-defense or as the result of deception, he cannot cope with the consequences of his actions. This time, he collapses into a fitful sleep that lasts five days and is full of the same haunting nightmares. During that time, war erupts on Earth between nations no longer held together by the threat of a common enemy. Resolution comes from Peter, who brokers a peace treaty that catapults him into a position of authority.

As the story nears its conclusion, many phases of the monomyth are evident, but not clearly distinguishable. Ender is deified as "the child-god, the miracle worker, with life and death in his hands."[46] Fearing how he will be manipulated by the various political factions on Earth, or by his own brother, he remains on the distant moon. There is no physical return to the world he left behind, as in many hero myths. He does return to his peer group, insisting he is no longer their commander, but solely their friend. Over time, they return home while he continues his internal struggles. Atonement eludes him. He struggles to reconcile his contradictory roles—creator of safety for some, but only through the destruction of others. Valentine arrives, unexpectedly, to rescue Ender from despair. Instead of assisting his literal return, however, she convinces him to lead the first interstellar colonization effort. Joining him will be the other

43. Card, *Ender's Game*, 294.
44. Card, *Ender's Game*, 296.
45. Card, *Ender's Game*, 296-7.
46. Card, *Ender's Game*, 307.

guardians from his journey, Graff and Mazer. Colonizing the bugger's worlds becomes a path of reconciliation for Ender. He works hard, leading by persuasion instead of raw power, and earning the admiration of his colony.

Years pass, and while scouting a location for another colony, Ender discovers a place that seems familiar. In this remote land, the enemy had built a full-size replica of the Giant's Drink. Ender realizes that the buggers were able to penetrate his dreams. Unable to communicate in terms he could comprehend, they appropriated his mental images in an attempt to leave him a message: "They found me . . . and dwelt in my mind. In the agony of my tortured dreams they came to know me, even as I spent my days destroying them; they found my fear of them, and found also that I had no knowledge I was killing them. In the few weeks they had, they built this place for me . . . so I would find this place by the evidence of my eyes. I am the only one they know, and so they can only talk to me, and through me."[47] The revelation ignites his memories of the battles he thought were merely simulations, only he can suddenly see them from the perspective of the queen. Moreover, he can recall the feelings she felt and he can put this tacit understanding into words: "The humans did not forgive us, she thought. We will surely die," and, "We did not mean to murder, and when we understood, we never came again . . . We could live with you in peace. Believe us."[48] Ender realizes two points. The first is that their confrontation was perhaps tragic—each unable to communicate their intentions to the other.[49] The second is that they have left Ender an opportunity to make amends—the queen has left him a fertilized pupa, capable of hatching "a hundred thousand buggers."[50]

Ender is now the master of two worlds. He is the hero of humanity and the only empathic voice for the buggers. He has saved one civilization and may now save another. His boon is thus two-fold. First, *Speaker for the Dead* is his anonymous book of the queen's collective wisdom, which develops a sacredness amongst humans everywhere. The second is the cocoon he carried with him to all the distant planets he will explore, "looking for the world where the hive-queen could awaken and thrive in peace."[51]

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47. Card, *Ender's Game*, 320-1.
48. Card, *Ender's Game*, 320, 321.
49. "So the whole war is because we can't talk to each other," Ender wonders. Graff answers: "If the other fellow can't tell you his story, you can never be sure it isn't trying to kill you" (Card, *Ender's* Game, 253).
50. Card, *Ender's Game*, 319.
51. Card, *Ender's Game*, 324.

This summary shows *Ender's Game* clearly fits within the hero motif, but that is not the only reason to use this text in PME.

Using his Game for our Gain

> *Wherever the poetry of myth is interpreted as biography, history, or science, it is killed . . . When a civilization begins to interpret its mythology [as science or history], the life goes out of it, temples become museums, and the link between the two perspectives is dissolved.*
>
> – Joseph Campbell, *The Hero with a Thousand Faces*

Ender's journey is certainly heroic, and the monomyth clearly has connections to innovation. There are other many other reasons, however, for using this particular story in PME. First, the work's quality is well established: it has been translated into 18 languages and won every major science fiction award.[52] Second, it presents an opportunity to discuss the ubiquity and suitability of using science fiction to predict future technologies and the dilemmas those technologies will create. Third, the book has already been employed in military settings. The US Marine Corps University uses *Ender's Game* to teach maneuver warfare and the type of leadership needed for decentralized operations.[53] The book is on the Marine Corps Commandant reading list, as well.[54] John Boyd recommended *Ender's Game*.[55] As already mentioned, it was also used at ACSC. As Associate Dean, Colonel Tom Ruby (US Air Force, retired) put the book into the curriculum against the opposition of some faculty. He felt the leadership lessons outweighed the resistance to fiction.[56] Other scholars have used the text for studying problem-solving, identity formation, politics, and religion.[57]

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52. P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century*, Reprint edition (New York: Penguin Books, 2009), 154.

53. A former USMC officer notes, "The similarities between *Warfighting* [USMC doctrine] and *Ender's* Game are manifold and uncanny: tempo, surprise, formlessness, ruthlessly attacking the enemy's critical vulnerabilities, exploiting fleeting opportunities, trust and implicit understanding between senior and subordinates, acceptance of risk, decisiveness, boldness, seizing the initiative, decentralization of authority, understanding the enemy and learning from him, mowing and inspiring your people—they are all there in spades" (John F. Schmitt quoted in Card, et al, *Ender's World: Fresh Perspectives on the SF Classic Ender's Game*, ed. Orson Scott Card (Dallas: Smart Pop, 2013), 208).

54. "Revision of the Commandant's Professional Reading list." 2 Jan 2013, accessed 10 February 2015, http://www.marines.mil/News/Messages/MessagesDisplay/tabid/13286/Article/136236/revision-of-the-commandants-professional-reading-list.aspx.

55. Card, et al., *Ender's World*, 209.

56. Card, et al., *Ender's World: Fresh Perspectives on the SF Classic Ender's Game*, ed. Orson Scott Card (Dallas: Smart Pop, 2013), 189-90, 197, 192.

57. Card, *Ender's Game*, xxv.

Fiction can do these things and, as long as Landy's precaution is heeded—do not automatically conflate persuasiveness with value—stories are a valid mechanism for discussing a multitude of topics. Yet, to answer the research question of this thesis, *Ender's Game* must *do* more. It must be formative, nurturing our Narrative Intelligence. It must help us understand ourselves, understand others, understand our organizational culture. It must nurture our creative thinking, our moral courage, and our ability to communicate. It must help our understanding of how to ennoble the innovator.

Any piece of literature, any story, that serves as a superstimulus for imagination and reflection and dialogue can do these things by virtue of its form. What suggests Card's work above others, however, is the content. The specific issues of the story are directly related to Air Force institutional concerns and, more pointedly, to General Kwast's order to encourage heroic innovators.

The following sections address how these issues are handled in the story and how those parts of the story can stimulate reflection and discussion in a PME seminar. These are points of departure, not lessons clothed in story form for a reader to decode. The idea is to ascend Bloom's Taxonomy, not of literary criticism, but of Narrative Intelligence; to practice and demonstrate knowledge, then comprehension, then application, then analysis, then synthesis, and finally evaluation . . . of the story, of the theory of NI, of others' NI, and of one's own NI. For such a subjective project, it makes no sense for me to provide my own interpretation. What you will find, instead, are some suggestive links between the story and the themes of my argument. These are points to ponder. Finally, examples are not strictly associated to a particular topic because they can relate to many different aspects of the thesis.

Story Elements. Stories contain meaningful sequences, settings, and struggles of characters. Does *Ender's Game* neglect any of these elements? Who is struggling against whom and why? Does any agent prevail and if so, how? How is victory defined?

Details. Part of the art of storytelling is finding the right balance of detail to paint a vivid mental image, while still leaving space for the audience to fill in the gaps, to become engaged as the co-creators. When Card opens each chapter with a dialogue that is completely disembodied and devoid of context, is this confusion incoherent? Or is it productive (now, or maybe later)? Is the ambiguity frustrating for readers? Does that frustration create tension that, once resolved, leaves the reader with a sense of satisfaction? When he describes a scene, for instance, Graff's meeting with the parents, how much detail does one's mind automatically fill into this literary blind spot?

Perspectives. The story is told from Ender's perspective, with some exceptions. Yet, Ender is not the narrator. The narrator simply reports Ender's thoughts and emotions without assessing their validity. Most readers then naturally presume the need to suspect the accuracy of Ender's ideas and feelings. Are they really true for Ender (i.e. is there coherence)? Are they really appropriate and valuable for Ender's situation (i.e. is there fidelity)? Additionally, when characters disagree, the reader cannot defer to an omniscient narrator. For example, why is it that Ender is so adamant that "holding onto the corridor gravity orientation, instead of thinking of the enemy gate as downward, was limiting [others'] thinking"?[58] The reader must don opposing perspectives to evaluate whether characters have good reasons for their beliefs and actions. And then readers should take a step back and evaluate whether *they* have good reasons for their conclusions.

Strangeness. The novel begins in familiar settings, such as an elementary school, a doctor's examination room, and a family's home. The opening chapters also allude to identifiable phenomena: leadership, war, training, social strife. Even the international order is reminiscent of the Cold War, with the Warsaw Pact still intact. As the story juxtaposes familiar issues with unfamiliar settings, does this effectively intensify the reader's experience? Or, is the transition to space and aliens and gravity manipulation too far fetched to preserve a modicum of fidelity?

Surprise. Ender's final examination is a trick played on the students and, the author hopes, the audience as well. A reader should ponder whether it violated her expectations, and how. What other patterns are broken along the way? Is the ending a surprise, and why?

Orientation. Maps are simplified models of a multi-dimensional world. They are less useful for navigation without the proper orientation. Paradigms are mental maps that help us navigate through life by orienting us to the world and interpreting, or *making sense*, of that world. Switching between mental models is not effortless, but it is a crucial skill for innovation. In *Ender's Game*, spatial orientation in zero gravity is explicitly correlated to cognitive aptitude. Ender distinguishes himself by playing with different orientations in his mind, while others are unable to match his mental agility. The other students are actually frightened that now "directions are whatever you conceive them to be."[59] How does this relate to the orientation in Colonel John Boyd's strategic theory? How are various military organized oriented?

58. Card, *Ender's Game*, 102.
59. Card, *Ender's Game*, 31.

Social Animals. Due to our social nature, we have an innate capacity to form theories of the minds of others. This is particularly true for those we know most intimately. Indeed, the story has multiple examples of Peter, Valentine, and Ender accurately anticipating each other's thoughts. Does this happen within Air Force units? Can it be deliberately nurtured? What are the advantages and disadvantages of this skill? Card writes, "Ender listen[ed] more carefully to what people meant, instead of what they said. It made him wise."[60] Can this really cultivate wisdom, and if so, how?

Patterns. As a species, our evolutionary niche is the cognitive domain, which we nurture by mentally playing with patterns. During Ender's first day in the game room, he immediately grasps the patterns of one particular game. He quickly crafts tactics to exploit the computer's lack of creativity, and the game is no longer fun for him. Ender then becomes eager to play against other students, but soon finds they have simply learned to "think like a machine instead of a boy."[61] What is preferable in the Air Force, or the military at large: the metaphor of machines or the messy reality of humanity?

Language. Language is simply an extension of pattern-seeking minds evolving in social contexts. We instinctual enjoy sharing patterns. The buggers, although also a social species, developed a much different form of communication that proceeds directly from one mind to all other minds. Graff thus asks, "Why would they ever develop language? Why would they ever learn to read and write? How would they know what reading and writing were if they saw them? Or signals? Or numbers? Or anything that we use to communicate? This isn't just a matter of translating one language to another. They don't have a language at all."[62]

What does the contrast reveal about our language? Indeed, that very question presupposes one answer: we can think metaphorically, because our minds accept a degree of slack between an image and the reality it attempts to represent. If we were to emulate the computer, as the boys did in the game room, we would gain precision at the expense of flexibility. Of course, communication (and culture) does not work without sufficient overlap between the meaning of symbols. Can metaphors be used to bridge the divide between an innovative way of thinking about a problem and an outdated mode of thought?

60. Card, *Ender's Game*, 111.
61. Card, *Ender's Game*, 46.
62. Card, *Ender's Game*, 253.

Creativity. Innovation is about breaking old patterns. To preserve Ender's creativity, Graff isolates him. Is this an effective way of preserving or increasing the ability to produce novel ideas? What are other ways? What is the role of creativity in organizing, training, and equipping the US military? If creativity is necessary but insufficient for innovation, what else is needed? Is sensing new security environments—a key step for military innovation, according to Rosen—a matter of perceiving new patterns, or reexamining old patterns in new ways?

Hobbesian Wickedness. Security professionals must prepare for a world in which the role of force is an enduring factor. What would it take to invalidate that proposition? Perhaps it is innate, as Valentine states when Ender laments being a killer: "What else should you be? Human beings didn't evolve brains in order to lie around on lakes. Killing's the first thing we learned. And a good thing we did, or we'd be dead."[63]

Human groups have generally become more inclusive over the broad arc of history. With each expansion of identity, more people are brought into one's own group. In other words, there are fewer *others* to violently compete against. In the novel, all of Earth's nations are brought together to secure themselves against an interstellar *other*. Are there any insights for our current national security paradigms? How have stories contributed to inclusive or exclusive definitions of group identities? How have religions promoted stability or instability? Do they privilege stories of communion or competition? Ender has a memory of his mother reading to him what he assumes is a religious proverb, "Think not that I am come to bring peace on earth. I came not to bring peace, but a sword."[64]

Dionysian Wickedness. In multiple places, the characters comment on the suppression of religion. For example, it is not just the memory of his mother praying over him, but also the whisper of *salaam* from a parting friend: "Ender guessed . . . the word [was] somehow forbidden. A suppressed religion, perhaps . . . Ender knew that it was sacred; that he had uncovered himself for Ender, as once Ender's mother had done, when he was very young, before they put the monitor in his neck, and she had put her hands on his head when she thought he was asleep, and prayed over him. Ender had never spoken of that to anyone, not even to Mother, but had kept it as a memory of holiness, of how his mother loved him when she thought that no one, not even he,

63. Card, *Ender's Game*, 241.

64. Card, *Ender's Game*, 171. This is a reference to Matthew 10:34, "Do not think that I came to bring peace on the earth; I did not come to bring peace, but a sword." Additionally, Luke 12:51 states, "Do you think I came to bring peace on earth? No, I tell you, but division."

could see or hear . . . a gift so sacred that even Ender could not be allowed to understand what it meant. After such a thing nothing could be said."[65]

This is simply one indication that the world has grown closer to an Apollonian perspective by Ender's day: science, technology, and individual agency outweigh the mysterious and the spiritual. Even the Battle School games are tightly controlled, by the administrators in the battleroom and by the computer in the mind games. The bugger queen epitomizes Plato's ideal of a philosopher-king: no dialogue amongst the *demos*, but rather instantaneous adherence to the mind of a single, super intelligent leader. Finally, the war is framed as an either/or proposition: "*If* one of us has to be destroyed, let's make damn sure we're the ones alive at the end [emphasis added]."[66] Card's treatment of these Apollonian images reveals his own bias towards the Dionysian: humility, improvisation, creativity, intuition, and inter-subjectivity. Additionally, the story concludes with Ender seeking a "yes, and . . ." solution (his civilization and the bugger's). Admittedly, he still has Ender highlight the need for some order as he contrasts the inflexibility of his first army with the laxity of his second army. Are hierarchical military organizations hopelessly biased towards rigidity?

The Perils of Expertise. The Dionysian perspective acknowledges limits to technical expertise, especially in matters outside of the Apollonian domain. Mazer's intuition about attacking a central queen offers one illustration. He also points out to Ender that scientists still could not believe his theory due to the lack of physical evidence. What are the advantages and disadvantages of experts? When it comes to nurturing or using experts, are there ways to preserve the benefits or mitigate the costs? Is strategic genius a type of expertise?

Nonlinearity. Nonlinear phenomena are common examples of Apollonian limits. In the story itself, using the relativity of time is an example that tends to surprise our temporal expectations. Thinking about the story itself, there is also an issue of reader comprehension: few well-crafted stories reveal themselves in predictable, linear fashion. Additionally, the reader's interpretation is always subject to the initial conditions, that is, her particular ideas, attitudes, and so forth.

Decentralization. One approach to complexity is to decentralize operations: enabling subordinate leaders to use their own judgment, their own initiative, to react to the particular challenge emerging in their local context. This is a consistent theme in Card's work, as demonstrated in these three passages. The first is about training: "Alai kept trying new things,

65. Card, *Ender's Game*, 69-70.
66. Card, *Ender's Game*, 253.

which forced Ender to think of new tactics to cope with them. In part it was because they kept making stupid mistakes, which suggested things to do that no self-respecting, well-trained soldier would even have tried. Many of the things they attempted turned out to be useless. But it was always fun, always exciting, and enough things worked that they knew it was helping them."[67] The second and third quotes are about fighting the enemy: "Every single one of our ships contains an intelligent human being who's thinking on his own. Every one of us is capable of coming up with a brilliant solution to a problem. They can only come up with one brilliant solution at a time."[68] As Ender learns his team's strengths and weaknesses, and as mutual trust rises, performance in the simulator rises, too: "Ender watched as all his squadrons moved at once, each responding to its own situation, all guided by Ender's overall command, but daring, improving, feinting, attacking with an independence no bugger fleet had ever shown."[69] What are the advantages and disadvantages of decentralized operations? Are some forms of military power more appropriate for centralized control?

Contest for, and with, Power and Persuasion. Chapter one described a spectrum of political actions ranging from the exercise of power, armed politics, to the exercise of persuasion, unarmed politics. *Ender's Game* offers examples of the entire continuum. For instance, consider Ender's thoughts after the fatal fight at Battle School: "Peter had been right, always right; the power to cause pain is the only power that matters, the power to kill and destroy, because if you can't kill then you are always subject to those who can, and nothing and no one will save you."[70] Is this not the same paradigm of those who trick Ender into leading the offensive to destroy the buggers? Is it *good*?

At the story's beginning, Ender faces the gang of students leaving school. While also employing overt force against the gang's leader, he is also threatening to use force in the future if anyone attempts to hurt him again. This is an example of coercion: converting raw power into prestige. Control is also exhibited, in a microscopic and a macroscopic sense. First, the Battle School controls its students: where they go, how they dress, what games they play, their schedule, and so on. The threat of disenrollment preserves compliance. On a larger school, the nations of Earth are, to some degree, under the control of a global government exercising a monopoly on space power. The threat of invasion holds the world together. The shape of that international order was created largely by the United States because of their lead role in defeating the last

67. Card, *Ender's Game*, 92.
68. Card, *Ender's Game*, 271.
69. Card, *Ender's Game*, 275.
70. Card, *Ender's Game*, 212.

attack. How does that relate to global politics after World War II? What does that portend for a world changing from the pressures of globalization?

Today, a new security environment is emerging, which will grant a larger role for unarmed politics: convincing others is more appreciated and more important than ever in modern times. *Ender's Game* offers multiple examples of how influence through persuasion, whether it is the power of an idea or deliberate deceit. The most obvious illustration is how Ender is manipulated to enter and continue his training, and next, to command the actual battle fleet. Consider, also, the example of his siblings and the influence they accrue—as powerless children—by the power of their ideas. When Peter first explains his scheme to Valentine, he says, "I've been studying history. I've been learning things about patterns in human behavior. There are times when the world is rearranging itself, and at times like that, the right words can change the world. Think what Pericles did in Athens . . . there are times when the world is in flux and the right voice in the right place can move the world."[71] The plan forces Valentine to face an unpleasant truth about her own ability to persuade others: she "could convince them that they wanted what she wanted them to want."[72] "She had wanted to believe she was good at persuading people because she was right, not because she was clever. But no matter how much she told herself that she didn't even want to exploit people the way Peter did, she enjoyed knowing that she could, in her way, control other people. And not just control what they did. She could control, in a way, what they wanted to do . . . There was more Peter in her than she could bear to admit, though sometimes she dared to think about it anyway. This is what she thought as Peter spoke: You dream of power, Peter, but in my own way I am more powerful than you."[73]

Can there be persuasion without force or force without persuasion? Does it depend on the relationship between the two actors? There is a body of moral convention surrounding armed politics. What moral norms affect how we convince others? Is it acceptable to mislead a strategic audience to gain a competitive advantage? Ender's parents are allowed to have him because there is hope he will embody the best of his two siblings. Does Ender represent the master of these two worlds, power and persuasion? His two greatest impacts on Earth are at the poles of the continuum: destroying the buggers and then speaking for the dead. Is it realistic to expect military professionals or a military organization to display similar versatility?

71. Card, *Ender's Game*, 128.
72. Card, *Ender's Game*, 127.
73. Card, *Ender's Game*, 127-8.

Empathy. What is the role of empathy in being able to persuade others? Theory of mind can be cognitive or affective. Both require imagination, but the first is intellectual and the second is psychological: understanding another's perspective versus identifying with another's experiences. Ender describes each as he explains to Valentine what he contemplates when watching the videos of past bugger wars: "I don't care about how we killed them. It's the buggers themselves. I don't know anything about them, and yet someday I'm supposed to fight them. I've been through a lot of fights in my life, sometimes games, sometimes—not games. Every time, I've won because I could understand the way my enemy thought. From what they *did.* I could tell what they thought I was doing, how they wanted the battle to take shape. And I played off of that. I'm very good at that. Understanding how other people think."[74] What torments him, he admits to his sister, is "In the moment when I truly understand my enemy, understand him well enough to defeat him, then in that very moment I also love him. I think it's impossible to really understand somebody, what they want, what they believe, and not love them the way they love themselves. And then, in that very moment when I *love* them . . . I *destroy* them. I make it impossible for them to ever hurt me again. I grind them and grind them until they don't *exist*."[75]

As Mazer later explains, this is precisely the reason the commander needed to be a child, and why the child must believe he was only playing a game: "We had to have a commander with so much empathy that he would think like the buggers, understand them and anticipate them. So much compassion that he could win the love of his underlings and work with them like a perfect machine, as perfect as the buggers. But somebody with that much compassion could never be the killer we needed. Could never go into battle willing to win at all costs. If you knew, you couldn't do it. If you were the kind of person who would do it even if you knew, you could never have understood the buggers well enough."[76] If the unarmed politics are indeed becoming more important than before, and if effective persuasion of other actors requires a degree of empathy, what are the implications for military officers?

Law of Armed Conflict . . . in Space. Historian Max Hastings writes, "It was the Japanese people's ill-fortune that it became feasible to bomb them just when American squeamishness about killing civilians was eclipsed by ruthlessly pragmatic assessments of how best to exploit available technology to injure the enemy and enhance the credibility of strategic air power."[77]

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74. Card, *Ender's Game*, 237-8.
75. Card, *Ender's Game*, 237-8.
76. Card, *Ender's Game*, 298.
77. Max Hastings, *Retribution: The Battle for Japan, 1944-45*, Reprint edition (New York: Vintage, 2009), 281.

Are there connections between the morality and effectiveness of Ender's final battle and strategic bombing, either as conducted in World War II or anytime since? Are there any connections between Ender and Remotely Piloted Aircraft aircrews?

Moral Accountability. Is Ender morally culpable for the deaths of the two students he fights? Who is accountable, if not Ender? If a reader is asked, do his actions make you cringe or cheer, what does the reader's answer reveal about himself? Should we evaluate the morality of an incident on the basis of intent or method or outcome?

Moral Courage. Who in the story displays moral courage? Is it morally courageous for Ender to quit playing the battleroom games or to refuse to go straight to Command School or to attempt cheating on his "final examination"? When is moral courage required for military professionals? In what ways does organizational culture, generally or particularly, help or hinder the display of such courage? When is good intention sufficient to overcome immoral or even illegal methods?

Heroism. Is Ender a hero for winning? Is Ender a hero for speaking for the dead or for restarting a civilization? Can heroism exist without physical danger? Should military culture allow for "warriors," who are increasingly separated from war by technology, to be heroes by virtue of their superior cognitive skills, moral courage, and communication? Is this what the author intends? Is this what General Kwast expects?

Consider the case of Colonel John Warden (US Air Force, retired). Although recognized as a the lead architect of air power operations in Desert Storm, he was denied promotion to Brigadier General. One officer offers a possible reason, stating "Warden is considered . . . by the tactical community as a failure, not as a hero . . . It is just that all some people do is sit and theorize."[78] Is that a fair evaluation of what constitutes heroism?

Reality versus Rhetoric. Attempts to ennoble someone, to persuade them of their heroism, may be convincing. There is also a chance that there is too much divergence between the person's conception of who they are, or what they do, and their paradigm of the archetypical hero. In the book, an officer at the Command School mentions the "majesty of flight among the stars." Graff replies, "You make it sound like a priesthood." The admiral answers: "And a god. And a religion . . . I can see you find my mysticism distasteful. I assure you that your distaste only reveals your ignorance. Soon enough Ender Wiggin will also know what I know; he will dance

78. General Robert D. Russ (US Air Force, retired), quoted in Olsen, *John Warden and the Renaissance of American Air Power*, 271.

the graceful ghost dance through the stars, and whatever greatness there is within him will be unlocked, revealed, set forth before the universe for all to see."[79] Apart from providing another example of mysticism, this raises an important question: is it true? Does Ender feel this way, ever? Did the aces of early World Wars feel this way? Who benefits from such a narrative and who suffers?

Stories. The power of stories is a recurrent theme in *Ender's Game*. For instance, the artificial intelligence that controls the mind game resonates with the challenge faced by current AI researchers: how to code Narrative Intelligence, the essential human quality, into computers. That is precisely what occurs in the Giant's Drink. The game is "a relationship between the child and the computer. Together they create stories. The stories are true, in the sense that they reflect the reality of the child's life."[80] Similarly, Valentine convinces Ender to lead the colonization effort by evoking storytelling: "Ender, what's done is done. Their worlds are empty now, and ours is full. And we can take with us what their worlds have never known . . . In all the bugger worlds, there was never more than a single story to be told; when we're there, the world will be full of stories, and we'll improvise their endings day by day."[81]

Part of his ongoing journey, which is both physical and metaphorical, is interpreting the bugger's story in *Speaker for the Dead*.[82] These passages are opportunities to discuss the ubiquity of stories in human culture and the specific use of stories to influence decisions. Another important topic is whether students believe storytelling is a skill that can be taught.[83]

Coherence. Most of these discussion points are internal to the story. That is, the characters' actions and decisions illustrate particular themes. To elevate the discussion, it is critical to assess the story itself. Apart from simply searching for the presence of story elements, this requires a reader to assess the story's coherence. First, does it strike the right balance of clarity and complication, between uninteresting obviousness and exasperating obfuscation? Second, does the story's parts fit together well? Does it have integrity?

79. Card, *Ender's Game*, 256.
80. Card, *Ender's Game*, 121.
81. Card, *Ender's Game*, 312-3.
82. Card, *Ender's Game*, 322.
83. For examples of authors who argue storytelling can be taught, see Fairhurst's *The Power of Framing*, Simmons' *The Story Factor*, Denning's *Narrative Intelligence*, Guber's *Tell to Win*, or Armstrong's *Managing by Storying Around.*

The story's integrity should be evaluated on two levels. Superficially, the various story elements must be integrated into a coherent project: consistent, reasonable, and coordinated. More fundamentally, however, does the story exhibit coherence in values? In other words, as the reader assumes the perspective of various characters, have those characters followed the logic of good reasons? Do they realize what personal values are relevant to their struggles? Do they adhere to their own values? Do they judge consequences based on the operable values? Do they understand how their values interact internally and externally, with the values of others? This exercise in empathy is exactly what makes novels a deliberate tool for honing our theory of mind.

Fidelity. Fidelity means a story *resembles* reality. What are the similarities and what are the differences between Ender's world and our own? What insights arise from juxtaposing the story against the world, as a reader perceives each? Are those insights relevant, and if so, how?

If fiction is to cultivate mental agility, readers must then treat these analytical questions as fodder for analyzing one's own analysis. This executive perspective asks whether there are good reasons for how the story's coherence and fidelity are judged. A reader evaluates the characters on the basis of this *logos* and then evaluates her own evaluations using the same narrative-rationality. In a classroom setting, the results of self-reflection should be shared. Not only does this exercise rhetorical competence, evaluating each other's evaluations (of the work and of themselves), is further material for analysis.

Character Development. Finally, is it useful to approach our personal character development as co-writers of our own lives? Are our characters subject to the same logic of good reasons? Does it matter if our paradigms and our behaviors exhibit coherence and fidelity?

Conclusion

> *We have not even to risk the adventure alone; for the heroes of all time have gone before us; the labyrinth is thoroughly known; we have only to follow the thread of the hero-path. And where we had thought to find an abomination, we shall find a god; where we had thought to slay another, we shall slay ourselves; where we had thought to travel outward, we shall come to the center of our own existence; where we had thought to be alone, we shall be with all the world.*
>
> – Joseph Campbell, *The Hero with a Thousand Faces*

The first time I read *Ender's Game*, in the summer of 2013, I skimmed the author's introduction. I only reread the novel after completing chapter three of this thesis. This time, reading his introduction closely, I was pleasantly surprised by the points that relate directly to my argument. Of course, it should not be surprising that an author affirms the power of storytelling.

Yet, he also incorporates many of the other themes of this thesis. For example, the inspiration for the story was an analogy between the American Civil War and Isaac Asimov's *Foundation* trilogy (itself a juxtaposition of science fiction and Edward Gibbon's *Decline and Fall of the Roman Empire.*) The fundamental challenge of operating in space would be mental: the need to think in multiple dimensions, much like the challenge for early aviators, as Card points out. Card is also a product of the original Dionysian activity: acting in plays, writing plays, and operating a theater. He sought to challenge other's paradigms, not by following the rules of literary theory, but by the power of the story itself.[84] Finally, he acknowledges the impact of any story rests with how readers interpret the text themselves:

> I think that most of us, anyway, read these stories that we know are not 'true' because we're hungry for another kind of truth: The mythic truth about human nature in general, the particular truth about those life-communities that define our own identity, and those most specific truth of all: our own self-story. Fiction, because it is not about somebody who actually lived in the real world, always has the possibility of being about oneself . . . all of these readings of the book are 'correct.' For all these readers have placed themselves inside this story, not as spectators, but as participants, and so have looked at the world of *Ender's Game*, not with my eyes only, but also with their own . . . The story itself, the true story, is the one that the audience members create in their minds, guided and shaped by my text, but then transformed, elucidated, expanded, edited, and clarified by their own experience, their own desires, their own hopes and fears . . . If the story means anything to you at all, then when you remember it afterward, think of it, not as something I created, but rather as something that we made together.[85]

The story, obviously, may *not* mean anything to the reader. Any meaning it does have will, as he states, be a result of what the reader does with the text. This chapter simply points out that, regardless of specific meanings students may construct from this story, there are some fundamental lessons for leaders. The first is that stories have meanings at all—stories are intuitively *meaningful* ways of communicating—and those meanings are created subjectively. Stories can *ennoble* an individual and transform innovation into a heroic endeavor. Stories can *cultivate* an appreciation for disorder and diversity and thereby nurture creativity and humility. Persuasive storytelling can be a *wonderful* compliment to brute force.

84. Card, *Ender's Game*, xi-xix.
85. Card, *Ender's Game*, xxii-xxvi.

Of course, no one is likely to appreciate the power of stories from one reading of one story. What PME can do, however, is expose officers to the formative potential of fiction, and let them practice engaging stories and each other. This itself requires an innovation in PME.

Who will be the heroes of that story?

Chapter 5

Conclusion

I think we ought to read only the kind of books that wound and stab us. If the book we're reading doesn't wake us up with a blow on the head, what are we reading it for? So that it will make us happy, as you write? Good Lord, we would be happy precisely if we had no books, and the kind of books that make us happy are the kind we could write ourselves if we had to. But we need the books that affect us like a disaster, that grieve us deeply, like the death of someone we loved more than ourselves, like being banished into forests far from everyone, like a suicide. A book must be the axe for the frozen sea inside us.

– Franz Kafka, *personal letter*

Story is a seldom-used synonym of argument. To understand whether fictional stories can encourage heroic innovators, this thesis provided its own story—a story about stories. Chapter one began with a story set in the past and chapter four ended with a story set in the future. Between Greek gods and Ender's games, I argued for a particular metaphor of life, described a Theory of Narrative Intelligence, and explained how stories can contribute to the skills and inspiration needed for innovation. This conclusion offers a framework to bring those elements together, to propose what exactly this thesis offers for the "three Cs" of innovation: cognition, courage, and communication.

Theoretical Coherence

The prefix "meta-" originates from the Greek language and means beyond or after. It has been used throughout the thesis: metaphor means beyond the form; metamorphosis means a complete change from one form to another; innovating PME to produce more innovator thinkers was described as a meta-innovation. In a word, "meta-" is what the recommendations of this thesis can deliver to OPME students: meta-cognition, meta-courage, meta-communication.

Cognitively, students should understand the nature of thinking: the paradigmatic spectrum and the natural tendency to think by comparing and contrasting metaphors. Students should grasp the narrative qualities of all verbal communication and the logic of good reasons that judges the implications of even technical arguments. Furthermore, we evolved into story-telling animals: imparting meaning into patterns describing how relatable characters struggle to prevail in particular settings. These stories are pregnant with implications: what the reader must imply to fill in gaps in information, how to interpret the story's implicit meanings, what implications flow from the story. We intuitively evaluate these stories on the basis of their internal coherence and their external relevance. The first is a measure of the story's clarity and

how well the elements fit together. The second is a subjective assessment of how values should and should not, do and do not, operate on the action. The advanced student can review his own evaluations using the same two criteria, and then do the same of others' self-assessments.

Evaluating values is inherently subjective, dynamic, and tacit. Appreciation of this situation should naturally lead the student to the role of Dionysian forces and the proper relationship between order and disorder, certainty and complexity, control and chaos. Creativity is not an Apollonian value. And yet, creativity is exactly what is needed to perceive and predict new security environments. The shift from armed politics towards unarmed politics is one such transformation and one that privileges the gifted storyteller.

Like all changes, this transition can be frightening. It takes courage. It also takes leaders who understand how to overcome organizational inertia; how to get military institutions to invest in the skills required in this unfamiliar security context; how to ennoble the heroic innovator. It also requires an understanding of how humans communicate, how to use stories to promote those with the moral courage to bring forth disruptive ideas, and how to listen to the stories of others to humbly accept their truths and their values.

Theoretical Fidelity

Stories are not the only communication we judge on the basis of coherence and fidelity. Theories and arguments are also evaluated by how well they hold together and, more importantly, by their relevance for the reader. If this thesis is judged sufficiently coherent and, more importantly, if it resonates with the reader's values and experiences, then the reader has *good reasons* to *do things* with this story, whether it is fact *or* fiction.

Epilogue

> *Ambiguities of experience and desire are challenges to standard notions of decision making order. From a calculus that sees alternative states of the world as mutually exclusive and exhaustive and causality as orderly, we are led to a calculus that allows the simultaneous existence of opposites and causal inconsistencies. From a conception of wants as consistent and clear, we are led to a conception of wants as contradictory and fuzzy. Worlds in which interpretation and desires are contradictory and causality is unfathomable can be disturbing. They are represented in fairy tales by the forest (dark, forbidding, and dangerous) and in stories of adventure by the sea (dark, powerful, and uncontrollable). Ambiguous worlds are disturbing, but they are also magical. Beauty and ugliness are compounded; reality and fantasy are intertwined; history is created; intelligence is expanded.*
>
> – James March, *A Primer on Decision Making*

> *It's too deep for me, Graff. Give me the game. Nice, neat rules. Referees. Beginnings and endings. Winners and losers and then everybody goes home.*
>
> – Anderson to Graff, *Ender's Game*

Like the prologue, an epilogue is used for closure at the end of a story. It is sometimes used to deliver a summation of the story's meaning or to reveal a surprise ending. Here is mine: this thesis started as an answer to General Kwast, but it has developed a deeper purpose. General Kwast will finish his tour at Air University and his vision, including the call for heroic innovators, may end with his departure. More fundamentally, however, this thesis is about something that never finishes, sometimes that never ends: strategy.

When OPME students read *Ender's Game*, the question they should really confront is what is actually strategic about the games or the operations. Is it strategic to be an "ender," seeking a permanent competitive advantage, as Ender does in his fights and while playing the mind game? Is the purpose of strategy to find the opponent's center of gravity, as Mazer did, to decisively defeat the entire enemy fleet? Or is strategy about manipulating the rules of the game itself, as Ender does to win his last battleroom war and, in fact, the real war as well? Yet, these examples still seem to betray the essence of strategy as "a plan for attaining continuing advantage"[1] and conflate the role of tactics and strategies as Everett Dolman distinguishes the two activities:

> The tactical thinker seeks an answer. And while coming to a conclusion can be the beginning of action, it is too often the end of critical thinking. The strategist will instead search for the right questions; those to which the panorama of possible answers provides insight and spurs ever more questions. No solutions

1. Everett Dolman, *Pure Strategy: Power and Principle in the Space and Information Age*, (London: Routledge, 2005), 6.

> are possible in this construct, only working hypotheses that the strategist knows will one day be proven false or tossed aside. Strategy is thus an unending process that can never lead to conclusion. And this is the way it should be: *continuation* is the goal of strategy—not culmination . . . the strategist must concentrate less on determining specific actions to be taken and far more on manipulating the structure within which all actions are determined . . . strategy is not about winning . . . victory is but a moment in time, a point of reference in a continuously changing web of history. It is never an end. It is ever a new beginning.[2]

Thus, strategy is in the realm of the Dionysian. The tactician can afford a more Apollonian approach. One is manipulating paradigms and the other is solving puzzles. Both are required for success, but the *utility* of the second perspective must be directed by the *values* of the first. And the way to communicate effectively in a world of disorder and danger is precisely what Ender offers as his most strategic act: a story.

In *Speaker for the Dead*, Ender finds a way to alter the beliefs and the behaviors of an entire civilization and, in doing so, he paves the way for the continuation of another. It is not a plan per se—strategies never are—but an idea in story form: a meaningful narrative, explaining how and why a character struggles to prevail. Moreover, like all strategies, it filters the past to make sense of the present and then to realize a continuous advantage in the future. In other words, strategies are not just stories—they are works of fiction.

As a fictional text, strategies require the active participation of others to interpret the narrative, to evaluate it on the basis of coherence and fidelity, and to work through the implications as it fits their truths, their local contexts, their own grasp of a kaleidoscopic and cacophonous world. The heroes of these stories are not the ones who single-handedly slay the dragon on the behalf of their tribe; not the ones who seek to uncover the one big thing that will decide victory, like Plato's autocratic king. Instead, the heroes are those, like Pericles, who can harness democratic diversity to a common objective, who can preserve individual initiative and creativity, while offering an effective, albeit fleeting, orientation. Perhaps the most heroic feat is convincing others that the times when we most crave the comfort of order and stability and control—those disruptive, disorderly, disorienting moments—are precisely moments our minds should stay open to the emergent possibilities of the world as it unfolds in ways that continuously surprise us.

What should not surprise us is that those who specialize in the craft of *storytelling* should have something useful to say for those who specialize in the craft of *strategy*. Thucydides' story

2. Dolman, *Pure Strategy*, 4-5, 9.

shows that, once upon a time, there was no distinction between the two, and Card offers us a character that eventually masters both. Hopefully, such exemplars will not remain artifacts of classical history or science fiction. Yes, a wicked world needs heroes, but it also needs strategic storytellers as well.

Appendix A

Examples of Dionysian Perspectives

Jervis, Robert. "Complexity and the Analysis of Political and Social Life." *Political Science Quarterly* 112, no. 4 (1997–98): 569-93.

> Jervis applies Complexity to issues of policy-making, noting, for example, that any decision will have profuse and often unintended consequences.

Rickles, Dean, Penelope Hawe, and Alan Shiell, "A Simple Guide to Chaos and Complexity." *Journal of Epidemiol Community Health* 61, no. 11 (2007): 933–937.

> This article lists examples of the increasing use of Chaos and Complexity theories in health sciences and offers practitioners in those fields a glossary for understanding the terms: "*Chaos* is the generation of complicated, aperiodic, seemingly random behaviour from the *iteration* of a simple rule . . . it is chaotic in a very precise mathematical sense. *Complexity* is the generation of rich, collective dynamical behaviour from simple *interactions* between large numbers of subunits" (933).

Dolman, Everett C., *Pure Strategy: Power and Principle in the Space and Information Age*, (London: Routledge, 2005).

> In Dolman's book, he pulls from fields such as quantum physics, philosophy, and biological sciences to clarify fundamental principles of strategy. Perhaps the most disconcerting, but still sensible, insight is that victory and strategy are too easily conflated.

Taleb, Nassim N., *Antifragile: Things That Gain from Disorder*, Reprint edition. New York: Random House Trade Paperbacks, 2014.

---. *The Black Swan: The Impact of the Highly Improbable.* 2nd edition. New York: Random House Trade Paperbacks, 2010.

> Taleb studies problems with our innate understandings of our own knowledge and our sense of probabilities. Disorder reigns and the second work explains how this is actually good for systems that can are designed properly.

Senge, Peter M. *The Fifth Discipline: The Art & Practice of the Learning Organization*. New York: Doubleday Business, 1994.

> Senge's work is now a bestselling classic book for management. It asserts that the only competitive advantage that is sustainable is one based on the ability to adapt. In turn, an adaptive, learning organization requires the ability to consider new, diverse, and holistic perspectives and create novel approaches to strategic issues.

Osinga, Frans P. B. *Science, Strategy and War: The Strategic Theory of John Boyd*. Cheltenham: Routledge, 2006.

> Osinga argues that "The scientific *Zeitgeist* provided [Boyd] with metaphors and new insights that connected to patterns he discerned in military history and strategic theory, as

well in his own military experience." An audience member in one of his briefings recalled, "Boyd introduced the language of the New Physics, Chaos Theory, and Complexity Theory" (127, 54).

Zimmerman, Brenda, Curt Lindberg, and Paul Plsek, *Edgeware: Lessons from Complexity Science for Health Care Leaders*. Irving, Texas: VHA, 1998.

This text contains principles of leadership and management consistent with Complex Adaptive Systems. An example prescription is "Uncover and work with paradox and tension" (33).

Sanders, T. Irene. *Strategic Thinking and the New Science: Planning in the Midst of Chaos Complexity and Change*. New York: Free Press, 1998.

Sanders was an early advocate for applying chaos theory and complexity to strategic thinking for large organizations.

Charles E. Lindblom, "The Science of 'Muddling Through,'" *Public Administration Review* 19, no. 2 (Spring 1959), 79-88.

Amitai Etzioni's "Mixed Scanning: A 'Third' Approach to Decision Making," *Public Administration Review* 27, no. 5 (December 1967): 385-392.

This pair of articles contains critiques of overly rational decision making models in public administration. Lindblom's alternative is an iterative approach that accepts incrementally better policies. Etzioni offers a hybrid of the two in order to find a useful balance between idealized planning and pragmatic planning.

Alan Beyerchen, "Clausewitz, Nonlinearity and the Unpredictability of War," *International Security* 17, no. 3 (Winter, 1992), 59-90.

Beyerchan argues Clausewitz comprehended the non-linearity of war and the paradoxical trinity demonstrates this understanding in *On War*.

Barry Watts, *Clausewitzian Friction and Future War*, Institute for National Strategic Studies, Washington D.C.: National Defense University Press, 2014.

In this paper, Watts proffers a taxonomy of a "mature notion of general friction" based on the works of Clausewitz but reconstructed using modern concepts, including cognitive limitations, non-linearity, emergent phenomena, and chaotic interactions. Watts suggests that evolutionary biology is a better metaphor for military theory than Newtonian physics, which as encouraged some to convert war into a science.

Jeff Conklin, *Dialogue Mapping: Building Shared Understanding of Wicked Problems*, Hoboken, NJ: Wiley, 2005.

This book outlines techniques for facilitating project meetings so that participants can trace the coherence of the overall argument and evaluate emergent ideas about the approach and the overall objectives. This approach is particularly designed for collaborative efforts addressing complex social problems.

Oswald A. J. Mascarenhas, "Innovation as Defining and Resolving Wicked Problems." 11 May 2009, accessed April 28, 2015, weaverjm.faculty.udmercy.edu/.../MascarenhasWickedproblems.doc.

This essay, available on-line, was part of a management course Mascarenhas taught at the University of Detroit Mercy. The thesis of the short piece is that business leaders must think clearly and creatively to produce innovative approaches for problems that have no final resolution or even a clear approach.

Neumeier, Marty. *The Designful Company: How to Build a Culture of Nonstop Innovation*. Berkeley, CA: New Riders, 2008.

Neumeier argues design should be a core competency of any organization that values innovation. This itself requires an innovation in organizational culture: drawing from an approach that is outside conventional business thinking. In design, rational decision-making is not complete without equal efforts towards storytelling, embracing error, reflection, inspiration, and moral courage.

T. C. Greenwood, "War Planning for Wicked Problems," *Armed Forces Journal*, December 1, 2009, accessed October 3, 2014, http://www.armedforcesjournal.com/war-planning-for-wicked-problems/.

According to this article, the Department of Defense is increasingly aware of wicked problems but is still unable to adapt its planning processes.

Huba Wass de Czege, "Systemic Operational Design: Learning and Adapting in Complex Missions," *Military Review*, January-February 2009, accessed July 27, 2014, http://www.au.af.mil/au/awc/awcgate/milreview/de_czege_systemic_op_design.pdf.

Military Operations based on mechanical causality are inherently flawed. The notion of an idealized "end state" with a predetermined path to achieving it should be replaced by provisional and iterative design based on "perpetual learning and adapting quickly to change." Deduction and analysis is appropriate for *complicated* phenomena, with its many parts that are logically separable. However, *complex* phenomena require logic that is inductive, abductive, and synthetic.

Mintzberg, Henry. *Rise and Fall of Strategic Planning*. New York: Free Press, 2013.

This work outlines the pitfalls of planning in complex environments. The author also highlights paradoxes such as the expectation for predictions increased as unpredictability increases and novel situations may require action prior to comprehension.

Appendix B

Studies on the Value of Stories

Reading stories improved students' ability to comprehend literal messages, infer future patterns, and critically evaluate information.[3]

The act of listening to stories improves student reading comprehension.[4]

Proficient readers practice "strategic" reading, regardless of the type of narrative: summarizing, reflecting on, and reinterpreting material. Reading stories helps poor readers become more proficient.[5]

Retention of information presented in stories is 50% higher.[6]

Stories facilitate metaphorical reasoning.[7]

"There does appear to be a direct and significant relationship between knowledge of story structure and comprehension of narrative and expository texts."[8]

Instruction in storytelling skill enhanced students ability to perform mathematical operations.[9]

Narrative rationality is a "prime instrument for all general learning."[10]

Stories enable "knowledge-sharing experience and accelerate the transfer of tacit knowledge."[11]

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3. T. Clymer, "What is 'Reading?': Some Current Concepts." in *Innovation and Change in Reading Instruction*, ed. H. Robinson (Chicago: University of Chicago Press, 1968).

4. S. Trostle, "Effects of Storytelling versus Reading on British Primary Children's Comprehension and Vocabulary Knowledge," *Reading Improvement* 35, no. 3 (Fall, 1998): 127-36.

5. Quentin Griffey, et al., "The Effects of Self-Questioning and Story Structure Training on the Reading Comprehension of Poor Readers," *Learning Disabilities Research* 4, no. 1 (1988): 45-51.

6. J. David Cooper, et al., *Literacy: Helping Students Construct Meaning*, 9th edition (Belmont, CA: Cengage Learning, 2014).

7. Roger Schank and Gary Saul Morson, *Tell Me a Story: Narrative and Intelligence* (Evanston: Northwestern University Press, 1995); Steven Pinker, *How the Mind Works*, Reissue edition (New York: W. W. Norton & Company, 2009).

8. R. Buss, et al., "Effects of Instruction on the Use of Story Structure in Comprehension of Narrative Discourse," *National Reading Conference Yearbook* 34 (1985): 55-8.

9. Daniela K. O'Neill, et al., "Predictive Relations between Aspects of Preschool Children's Narratives and Performance on the Peabody Individualized Achievement Test—Revised: Evidence of a Relation between Early Narrative and Later Mathematical Ability," *First Language* 24 (June 2004): 149-83.

10. S. Ragan and E. Wittenberg-Lyles. "Narrative Medicine and Education in Palliative Care," in *Narratives, Health, and Healing.* Harter, L., et al., eds. (Mahwah: Lawrence Erlbaum, 2005).

11. Deborah Sole and Daniel Wilson, "Storytelling in Organizations: The Power and Traps of Using Stories to Share Knowledge in Organizations," *The Knowledge Management Advantage* (February 2004).

"Story is a valuable resource for developing critical thinking skills and insight about cultural environment that transmits beliefs and values."[12]

"The telling and retelling of stories is the powerful means by which…problem solving skills are taught."[13]

Stories about potential future scenarios are "the most powerful vehicles . . . for challenging our 'mental models' about the world" and can be used as a building block for designing *strategic conversations* . . . [that] lead to continuous organizational learning."[14]

"Stories help people cope with complexity."[15]

"Thus, in writing scenarios, we spin myths—old and new—that will be important in the future . . . These myths in scenarios help us come to grips with forces and feelings that would not otherwise exist in concrete form. They help us describe them, envision them, bring them to life —in a way that helps us make use of them. Story-telling in the form of myths can reveal something about what we feel, hope, expect, fear for future."[16]

"Storytelling . . . stretches everyone's ability to empathize."[17]

Stories ignite connections with existing knowledge to enhance the relevance, interpretation, and application of new information.[18]

Exposure to stories enhances literacy and writing skills.[19]

As we read "there is also activation in the areas [of the brain] concerned with making the same actions ourselves."[20]

Fiction readers tend to have enhanced theory of mind.[21]

"It seems that a ready capacity to project oneself into a story may assist in projecting oneself into another's mind in order to infer their mental states. It has recently been observed that a very

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12. J. Taylor, "Storytelling and Violence against Women," *The ABNF Journal* (March-April 2001): 28-31.

13. Lewis Mehl-Madrona, *Coyote Wisdom: The Power of Story in Healing* (Rochester: Bear & Company, 2005).

14. Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World*, Reprint edition (New York: Currency Doubleday, 1996), xv.

15. Schwartz, *The Art of the Long View*, 38.

16. Schwartz, *The Art of the Long View*, 43.

17. Karl Weick and Larry Browning, "Argument and Narration in Organizational Communications," *Yearly Review of Management of the Journal of Management* 12, no. 2 (1986): 243-59.

18. John Holt, *How Children Learn*, Revised edition (Reading: Da Capo Press, 1995).

19. Deborah Tannen, *Talking Voices: Repetition, Dialogue, and Imagery in Conversational Discourse*, 2nd edition (Cambridge: Cambridge University Press, 2007); Haven, *Story Proof*, 2007.

20. Oatley, *Such Stuff as Dreams*, 19-20.

21. Raymond Mar, et al., "Bookworms versus nerds: Exposure to fiction versus non-fiction, divergent associations with social ability, and the simulation of fictional social worlds," *Journal of Research in Personality* 40 (2006) 694-712.

similar patter of brain activity underlies such diverse cognitive processes as autobiographical memory, future-thinking, spatial navigation and mental inferencing."[22]

"Fiction can offer the kinds of 'disorienting dilemmas' that [sociologists] have identified as triggers that start the transformative process. Thus, transformation is not dependent on the timing of a particular life event but can be stimulated by an imaginative event."[23]

Guided discussions of fiction works "helped to foster transformative learning through critical reflection on the way meaning is made, particularly through challenges to the assumption that an author determines meaning."[24]

It is plausible that "memory, finding one's way around in the world, imaginative thinking about the future, [and] knowing the perspectives of other people" are exercised through fiction.[25]

The emotions invoked by fiction lead to greater changes in personality than reading the same information in a non-fiction style. Furthermore, changes from reading fictional works showed persistence.[26]

Fiction orients readers to imperfections in human knowledge as a central feature of the human condition, instead of Platonic self-sufficiency.[27]

"Contradictory beliefs are a standard feature of life . . . the emphasis on the simultaneity of opposites [exists] in much of literature . . . Such ambiguity in the interpretation of human experience compromises any conception of order that presumes the mutual exclusion of opposites."[28]

22. Raymond Mar, et al., "Exploring the link between reading fiction and empathy: Ruling out individual differences and examining outcomes," *Communications, The European Journal of Communication* 34 (2009): 407-28.

23. Christine Jarvis, "Using Fiction for Transformation," *New Directions for Adult and Continuing Education* 109 (Spring 2006): 76.

24. Jarvis, "Using Fiction for Transformation," 74.

25. Oatley, *Such Stuff as Dreams*, 21.

26. Maja Djikic, et al., "On being moved by art: How reading fiction transforms the self." *Creativity Research Journal* 21 (2009): 24-9; Raymond Mar, et al., "Exploring the link between reading fiction and empathy: Ruling out individual differences and examining outcomes," *Communications, The European Journal of Communication* 34 (2009): 407-28.

27. Nussbaum, *Love's Knowledge*.

28. James G. March, *Primer on Decision Making: How Decisions Happen* (New York: Free Press, 2009), 185.

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