

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY) 02-05-2016		2. REPORT TYPE Research		3. DATES COVERED (From - To) September 2015 - May 2016	
4. TITLE AND SUBTITLE Marine Corps Moneyball: Operationalizing Personnel Analytics to Manage the Future Force.				5a. CONTRACT NUMBER N/A	
				5b. GRANT NUMBER N/A	
				5c. PROGRAM ELEMENT NUMBER N/A	
6. AUTHOR(S) Tremblay, Paul D., Major, USMC				5d. PROJECT NUMBER N/A	
				5e. TASK NUMBER N/A	
				5f. WORK UNIT NUMBER N/A	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Warfighting Marine Corps University 2044 South Street Quantico, VA 22134-5068				8. PERFORMING ORGANIZATION REPORT NUMBER N/A	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A				10. SPONSOR/MONITOR'S ACRONYM(S) N/A	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) N/A	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES N/A					
14. ABSTRACT The purpose of this paper is to assess the future impacts of operationalizing personnel analytics in the United States Marine Corps. The discourse begins with a definition of analytics, tracing its evolution to the human resource management arena, as well as highlighting the difference between quantitative and qualitative data. Current performance evaluation models inherent to the Marine Corps are then discussed to serve as a reference point for follow on analyses and to articulate how personnel analytics could be used to augment current models. An emergent model, based on the current Commandant of the Marine Corps' guidance, is then offered to serve as an additional reference point. The paper concludes with summary thoughts and recommendations for exploring personnel analytics in the future.					
15. SUBJECT TERMS Moneyball, personnel, analytics, readiness, evaluation, talent management, assessment, training, education, retention.					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 25	19a. NAME OF RESPONSIBLE PERSON Marine Corps University/SAW
a. REPORT Unclass	b. ABSTRACT Unclass	c. THIS PAGE Unclass			19b. TELEPHONE NUMBER (include area code) (703) 432-5318 (Admin Office)

*United States Marine Corps
School of Advanced Warfighting
Marine Corps University
3070 Moreell Avenue
Marine Corps Combat Development Command
Quantico VA 22134*

FUTURE WAR PAPER

Marine Corps Moneyball *Operationalizing Personnel Analytics to Manage the Future Force*

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF OPERATIONAL STUDIES

Major Paul D Tremblay Jr., USMC

AY 2015-2016

Mentor: Dr. Bradley Myer

Approved: May 2, 2016

Executive Summary

Title: Marine Corps Moneyball: Operationalizing Personnel Analytics to Manage the Future Force.

Author: Major Paul D. Tremblay Jr, United States Marine Corps

Thesis: As an organization dedicated to both individual and collective excellence, operationalizing personnel analytics to manage the future force may enable the Marine Corps to assess and retain the best available talent across all occupational fields, and gain a measurable competitive advantage in the process.

Discussion: The purpose of this paper is to assess the future impacts of operationalizing personnel analytics in the United States Marine Corps. The discourse begins with a definition of analytics, tracing its evolution to the human resource management arena, as well as highlighting the difference between quantitative and qualitative data. Current performance evaluation models inherent to the Marine Corps are then discussed to serve as a reference point for follow on analyses, and to articulate how personnel analytics could be used to augment current models. An emergent model, based on the current Commandant of the Marine Corps' guidance, is then offered to serve as an additional reference point. The paper concludes with summary thoughts and recommendations for exploring personnel analytics in the future.

Conclusion: As General Neller argues, "the future fight will involve rapidly changing and evolving technologies and concepts, which will force us to be more agile, flexible and adaptable." Inherent in this statement is the requirement to continually challenge institutional approaches and paradigms in order to stay ahead and succeed. Billy Beane demonstrated one way to do this is to embrace rapidly evolving technology when forced to be more agile, flexible, and adaptable. He did it by using metrics to challenge conventional thought in a traditional organization. His approach presents a unique case study worthy of future exploration within the Marine Corps. During this exploration, many tenured personnel will argue that expert judgment is the best way to identify and retain quality Marines. While certainly valid, the ability to make considered decisions or come to sensible conclusions requires accurate information. Personnel analytics does not replace judgment, it only adds to the quantity and quality of information; the type of information that might just translate into superior operational performance and the realization of untapped potential.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE SCHOOL OF ADVANCED WARFIGHTING OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

QUOTATION FROM, ABSTRACTION FROM, OR REPRODUCTION OF ALL OR ANY PART OF THIS DOCUMENT IS PERMITTED PROVIDED PROPER ACKNOWLEDGEMENT IS MADE.

Table of Contents

	Page
DISCLAIMER	ii
PREFACE	v
REPORT DOCUMENTATION PAGE.....	vi
BODY	
Introduction.....	1
Personnel Analytics Defined.....	3
Current Marine Corps Models	6
Reinforcing Existing Models	7
An Emergent Model.....	10
CONCLUSIONS.....	14
ENDNOTES	17
BIBLIOGRAPHY	18

Preface

I must acknowledge the significant contributions to my growth and understanding of this particular subject by the following individuals: Mr. Michael Lewis, for writing *Moneyball*. Mr. Pierre Sprey, for encouraging me to look for the data. Colonel Christopher Douglas, USMCR, Lieutenant Colonels Alvino Mendonca, USMC, Michael Lewis, USA (ret), Greg Wilcox, USA (ret) as well as Majors Don Vandergriff, USA (ret), Franklin “Chuck” Spinney, USAF (ret), Dan O’Connor, USMC (ret), Ryan Gordinier, USMC, and Peter Halleday, Australian Army for their patience, passion, and willingness to indulge me in long talks regarding warfighting, personnel management, recruiting, and human performance in general. To my fellow School of Advanced Warfighting classmates and faculty for our numerous discussions that have shaped, reshaped, and formulated the following ideas, both directly and indirectly. Dr. Bradley Meyer, for the countless hours spent making sense of my chaotic thought and writing processes. Dr. Wray Johnson, for your example and continued inspiration. Your collective willingness to indulge me is both humbling and inspiring. I would certainly not have been able to complete this project without all of your support. *Semper Fidelis*.

“People operate with beliefs and biases. To the extent you can eliminate both and replace them with data, you gain a clear advantage. Actual data means more than individual perception and belief.” John Henry¹

“Sound assessment blends qualitative and quantitative analysis with the judgment and intuition of all leaders.” FM 3-24, Counterinsurgency²

Introduction

In the winter of 2002, Billy Beane transformed talent acquisition in baseball. The reality he faced as the general manager of the Oakland Athletics major league baseball team was a fundamental shift from philanthropy to pragmatism. Long-time owner Walter Haas, Jr had recently passed and the team’s new owners, local real estate developers Steve Schott and Ken Hofmann, brought their business sense to baseball: slashing the team–operating budget to correlate with market trends. This dramatic reduction in capital called for a new investment strategy. Beane decided, against the recommendations of his primary staff and chief scouts, to turn his back on history and tradition, and entrust player acquisition and retention primarily to mathematical models developed by a young Yale-trained economist formerly employed by a rival team – the Cleveland Indians.

Beane’s use of analytical models in managing the Oakland Athletics not only challenged the conventional wisdom of the game, but also changed how the team played the game. Rather than focusing specifically on player potential through his tenured scouts’ qualitative assessment of a player’s swing, swagger, or appearance – attributes prized by the majority of big league teams at the time – Beane focused on player performance quantitatively; the data reflecting how much the player *actually* contributed *over time*. This fundamental shift in reference point allowed the Oakland Athletics to acquire some of the most effective players in baseball at significantly lower costs, comparatively speaking, because their lack of marketable attributes

made them in turn less in demand. Players like Jeremy Brown, Steve Hatteberg, and Chad Bradford facilitated the longest winning streak in American League history and brought the Oakland Athletics to the playoffs, year after year, for pennies on the dollar, not because they looked good, threw with ease, or had a beautiful swing, but because they were effective.

Billy Beane's approach demonstrates how incorporating personnel analytics models enabled senior leadership to field effective teams while working within the constraints of the larger organization by challenging organizational paradigms and biases with data. This approach, made famous by Michael Lewis' bestseller *Moneyball* and Brad Pitt's portrayal of Beane in the film by the same name, appears poised to alter the way future generations are assessed and retained by all competitive organizations. Its application has already forced almost every general manager in baseball to challenge his or her inherent beliefs and focus more on outcome-based metrics, both quantitative and qualitative.

With over 19 trillion in national debt and rising, the U. S. Department of Defense finds itself in 2016 in a similar situation as the Oakland Athletics experienced in 2002. As sequestration looms and budgets wain, not to mention the fact that less than one percent of Americans are willing and able to serve, the Department may be forced to follow Billy Beane's lead and assess both individuals and units based on what they can actually do, not based on how well they fit the traditional mold.³ As an organization dedicated to both individual and collective excellence, operationalizing personnel analytics to manage the future force may enable the Marine Corps to assess and retain the best available talent across all occupational fields, and gain a measurable competitive advantage in the process.

The purpose of this paper is to assess the future impacts of operationalizing personnel analytics in the United States Marine Corps. The discourse begins with a definition of analytics,

tracing its evolution to the human resource management arena, as well as highlighting the difference between quantitative and qualitative data. Current performance evaluation models inherent to the Marine Corps are then discussed to serve as a reference point for follow on analyses, and to articulate how personnel analytics could be used to augment current models. An emergent model, based on the current Commandant of the Marine Corps' guidance, is then offered to serve as an additional reference point. The paper concludes with summary thoughts and recommendations for exploring personnel analytics in the future.

Personnel Analytics Defined

Analytics is the discovery and communication of meaningful patterns in data.⁴ It relies on the simultaneous application of statistics, computer programming, and operations research to quantify performance. To quantify is to relate to, or measure by the quantity of something rather than its quality.⁵ It is objective, meaning that it is not influenced by personal feelings or opinions in considering and representing facts.⁶ Algorithms and software used for analytics harness the most current methods in computer science, statistics, and mathematics.⁷ Financial institutions now use analytics to predict future stock-prices. Marketing firms use analytics to search through individual internet browsing histories to discern value and habit. Until recently, however, very few people believed that analytics could apply to human resource management as well.⁸

Thanks in part to Billy Beane that number is growing exponentially. According to John Hausknecht, a professor at Cornell's School of Industrial and Labor Relations, the global market has recently witnessed a "huge surge in demand for workforce-analytics roles."⁹ Dedicated personnel analytics teams now reside in the human-resources departments of Google, HP, Intel, General Motors, and Procter & Gamble to name just a few, all trying to figure out which people are best suited to working for them. Last year Beane himself appeared at a large conference for

corporate human resource executives in Austin, Texas. His talk titled, *The Moneyball Approach to Talent Management* not only captivated his local audience, excerpts from his discourse has captured headlines throughout the human resource trade press ever since.¹⁰

The need to acquire the right people for the right positions as efficiently as possible is not a new phenomenon however. By the end of World War II, American corporations were facing severe talent shortages. Senior executives were growing old, and massive mobilization efforts combined with mass casualties resulted in a scarcity of able-bodied men. By the 1950s, it was common for corporate recruiters to spend days with young applicants, conducting a battery of physical, professional-aptitude, mental, personality, and medical examinations. This process did not end when someone was hired either. In his classic 1956 cultural critique, *The Organization Man*, journalist William Whyte wrote that about a quarter of the country's corporations were using similar tests to evaluate leadership potential of new employees, usually to assess whether they were ready for larger roles within the company. "Should Jones be promoted or put on the shelf?" he wrote. "Once, the man's superiors would have had to thresh this out among themselves; now they can check with psychologists to see what the tests say."¹¹

Interestingly, this process, so widespread in corporate America at mid-century, had almost disappeared by 1990. Several factors explain the dramatic shift. First, increasing personnel turnover made it less important and less economical for companies to test so thoroughly. Second, an increasing focus on short-term financial results led to deep cuts in corporate programs focused on long-term development. Third, the Civil Rights Act of 1964, which exposed companies to legal liability for discriminatory hiring practices, made human resource managers wary of any broadly applied and clearly scored test that might later be shown to be systematically biased. Finally, many of the methods of evaluation used at the time turned

out to be based on untested psychological theories. Others measured not potential but conformity. These factors combined led the more informal qualitative hiring practices that are still largely in place today.¹² Qualitative observations are more subjective. They are inherently biased by the placement, schema, and reference point of the observer.¹³

For these reasons and more, the application of predictive analytics to human resourcing, an emerging field sometimes called “people analytics,” is still in its infancy. Unlike baseball, a rigidly defined and relatively stable activity with massive amounts of quantitative data, the complex adaptive systems that comprise economies, societies, and warfare are far from predictable. This difference in scope and scale will either require the creation of a vastly larger box score of quantitative human performance data than one would ever encounter in the sports pages, or may force organizations to select a few essential criteria and leverage modern technology to assess potential applicants or talent pools, both quantitatively and qualitatively, against each other.

To some degree, the endeavor to holistically analyze human performance touches on the deepest of questions: how does one survive and thrive in a competitive environment? How does one adapt to change? Most organizations are just beginning to explore the possibilities that personnel analytics expose. Over the next seven to ten years, new models may be created, and new experiments run, on very large scales thanks to information technology that is constantly evolving. Methods of analysis promise to be cheaper, faster, and much wider ranging than ever before. For better or for worse, a new era of technocratic possibility is emerging, and the U.S. Marine Corps may either choose to shape or be shaped by it in the future.¹⁴

Current Marine Corps Models

Outside of height, weight, Physical Fitness Test (PFT) results, and Combat Fitness Test (CFT) results, assessments within the Marine Corps evaluation systems are primarily qualitative. As stated earlier, qualitative assessments are subjective. They are inherently biased by the placement, schema, and reference point of the evaluator.¹⁵ For example, enlisted Marines below the rank of sergeant are assigned proficiency and conduct marks based on ambiguous scales of measure against incoherent assessment criteria.¹⁶ Above the rank of sergeant, through the rank of major general, Marines are qualitatively assessed, predominantly by the next officer in their chain of command (reporting senior) and also by the second by the next officer in their chain of command as well (reviewing officer). These assessments, unless they are adverse or exceptional, require no quantitative data to be submitted as supporting evidence.

Evaluations for performance, proficiency, courage, effectiveness under stress, initiative, leading, developing, and ensuring the well-being of subordinates, setting the example, communication skills, professional military education (PME), decision-making ability, judgment, and accuracy and timeliness of subordinate evaluations are all graded on performance-anchored rating scales (PARS) scored from A (lowest, one point) to G (highest, seven points), with H indicating not observed (zero points). Any report with even one PARS marked A represents an “adverse” report. Descriptions are provided for what constitutes a B, D, and F rating but not for A, C, E, or G. Marks of A, F or G must be justified with comments.¹⁷

Since quantitative data respective to those categories is not available to reviewing officers in any of the current Marine Corps information management systems, unless the reviewing officer is actively present during the entire reporting period to directly observe the Marine being assessed, his or her qualitative review may be heavily biased by the reporting senior’s qualitative

observations as well. These qualitative assessments are then compared to every other qualitative assessment that both the reporting senior and reviewing officer has written on Marines of identical rank according to their respective evaluation profiles—regardless of any differences in billet description, leadership challenges, responsibilities, prior education and training, or unique circumstances—and with very little quantitative data to support their claims. These evaluation tools communicate the reporting officials’ assessments of the Marine’s performance and character to promotion boards for the selection and retention of the most qualified Marines in the grades of sergeant through major general, as well as the slating of officers for command or resident school billet assignments.¹⁸

Reinforcing Existing Models

As stated earlier, baseball has over a century’s worth of quantitative data available to analyze, sort, combine, and synthesize for analytical purposes. From this massive amount of data, Billy Beane and his staff were able to identify the relative value of available players to meet his needs within his constraints. Since personnel analytics requires both quantitative and qualitative data, the U.S. Marine Corps would first have to collect the quantitative data necessary to enable future qualitative assessments based on this data.

Using the performance evaluation systems listed above as a reference point, the Marine Corps could leverage the Marine Corps Information Management System (MCTIMS) to capture quantitative data to augment or even replace some of the categories currently evaluated solely by qualitative means. For example, for infantry Marines specifically, data could quantify the two aspects of performance, where appropriate, using data compiled from the Marine Corps Ground Training and Readiness Program parameters. The ability to perform a task to standard is the result of both training and practice. Training refers to activity that improves performance

through a measurable organic change in the body. By contrast, improvements in coordination, agility, balance, and accuracy come about through practice. Practice refers to activity that improves performance through changes in the nervous system.¹⁹

According to *Navy and Marine Corps (NAVMC) Order 3500.44B, Infantry Training and Readiness Manual*:

The Marine Corps Ground Training and Readiness Program includes processes to assess readiness of units and individual Marines. Every unit in the Marine Corps maintains a basic level of readiness based on the training and experience of the Marines in the unit. Even units that never trained together are capable of accomplishing some portion of their missions. Combat readiness assessment does not associate a quantitative value for this baseline of readiness but uses a Combat Readiness Percentage (CRP), as a method to provide a concise descriptor of the recent training accomplishments of units and Marines. CRP is the percentage of required training events that a unit or Marine accomplishes within specified sustainment intervals.²⁰

For the purposes of personnel analytics, this CRP calculation could be redesigned to associate a quantitative value for readiness by capturing performance data for each Marine as well as for each echelon of unit within the infantry.

For example, according to the same order, all infantry Marines, regardless of rank or billet, are required to perform 52 total core as well as 59 core plus individual infantry training events to standard. These events have associated sustainment intervals, which is to say that if the event has not been performed to standard and assessed within a specified time interval, that individual is no longer considered able to perform that event adequately in combat. The percentage of these 111 infantry specific events performed to standard, assessed within the specified sustainment intervals alone could elicit a basic overall individual training readiness percentage for each individual. This same type of training readiness percentage could be calculated from the Marine Corps Common Skills Program parameters as well.

Specific Military Occupational Specialty (MOS) training percentages could also be quantified using the same methodology above. For example, infantry officers, MOS 0302, are required to perform 35 core as well as 21 core plus MOS specific training events to standard, in addition to the 111 events outlined above. The percentage of these 56 infantry MOS specific events performed to standard, assessed within the specified sustainment intervals could also elicit an overall MOS specific training readiness percentage for every infantry officer, across the entire community. This same methodology could be applied to quantify the training percentage of every fire team, squad, platoon, company, and battalion in the infantry. Like the above, this rating would be based on collective training events performed to standard and assessed within the specified sustainment interval. If the sustainment interval expires, or if a member of the unit leaves or a new member joins the unit, especially the unit leader, those performance ratings would necessary revert to zero. After all, a unit is a collection of specific individuals – it does not exist within itself.

Thus far the discussion has only involved quantifying training data. As stated above, improvements in coordination, agility, balance, and accuracy come about through practice. Practice refers to activity that improves performance through changes in the nervous system.²¹ In order to quantify this aspect of performance, data on how many times the individual or unit *practiced* the individual or collective training event would also have to be collected. Obviously a Marine or a Marine Corps unit that has practiced an event 387 times is more apt to perform that event to standard in combat than a Marine or a unit who has only trained on the event once. Capturing practice data will enable the Marine Corps Training and Education Command in the future to associate practice data with associated skill levels, from beginner to master. These skills levels could then be used to discern basic readiness levels, specific manpower assignment

criteria, or to discern certain deployment eligibilities or to define a uniquely qualified status – such as the “subject matter expert.”

In order to quantify this data, MCTIMS, as mentioned above, would have to be modified to track both individual and collective training events. These events would have to be coded specifically to automatically update when their sustainment interval expires, or when previous performance is no longer valid due to a program update to the individual or collective event. When existing individuals leave the unit or new individuals join who have not demonstrated mastery within the sustainment interval, the training percentage should reflect accordingly. Automatic notification messages, according to individual preferences, such as an email stating “your individual or collective training event is due to expire within the next 30 days” would be a useful addition to the system as well.

An Emergent Model

As General Neller, the 37th Commandant of the Marine Corps outlined in *Fragmentary Order (FRAGO) 01/216: Advance to Contact*,

Over the last 15 years, we have fought the wars in Iraq and Afghanistan and continued to respond to crisis around the globe, during which Marines and Sailors have preserved and enhanced the professional warfighting legacy of our Corps. At the same time, we recognize the current and future fight may not be what we experienced in the past. It will involve rapidly changing and evolving technologies and concepts, which will force us to be more agile, flexible and adaptable.²²

He went on to state that the future operating environment will require Marines “who are smart, fit, disciplined, resilient, and able to adapt to uncertainty and to the unknown.”²³ Assuming that these and only these criteria were used to evaluate future Marines, a future personnel analytics model could evolve beyond the current training and readiness programs to assess individuals and units in the following ways.

“Smart” is informally defined as quick-witted intelligence or acumen.²⁴ Its closest measurable counterpart in cognitive psychology appears to be mental acuity. Mental acuity is a collective assessment of memory, focus, concentration, and understanding. It is a measure of how well one’s mind is working at the time of assessment. Just like any other organ in the human body, the brain can be in shape and function at a high level, or it can be sluggish and inefficient. While cognitive skills may be difficult to quantify, there are a number of data points that could be added to MCTIMS, such as standardized tests results, performance at formal and resident schools, as well as the quantity of practical problem solving tests and decision games completed, as well as books read from the Commandant’s Professional Reading List to date.

These data points could also be augmented with the results from new measurement tools, such as the ones currently under development by Lumosity.²⁵ Once specific parameters are defined by the service, or as new tools come online, this assessment category could develop into a composite measure that could become fairly robust. It could also be weighed accordingly and comparatively assessed by rank, billet, or MOS. This data would enable Marines to view and work towards improving specific elements of their assessment during personal study, as well as guide their selection of resident school electives or off-duty education. For Training and Education Command assessment purposes, this data could be tracked over the course of an entire career, assessing future capabilities against current and projected requirements.

“Fit” is defined to be of a suitable quality, standard, or type to meet the required purpose.²⁶ The latest research relative to fitness highlights at least ten recognized general physical skills. They are endurance, stamina, strength, flexibility, power, coordination, agility, balance, and accuracy.²⁷ An individual is as fit as he is or she is competent in each of these ten skills. Importantly, improvements in endurance, stamina, strength, and flexibility come about

through training. As stated earlier, training refers to activity that improves performance through a measurable organic change in the body. By contrast, improvements in coordination, agility, balance, and accuracy come about through practice. Practice refers to activity that improves performance through changes in the nervous system. Power and speed are adaptations of both training and practice. The essence of this category is the view that fitness is measured through assessing performance at any and every task imaginable, not just a select few such as the PFT or those designated by the Marine Corps Common Skills or MOS specific programs.

A future personnel analytics model could facilitate the tracking of a monthly physical fitness assessment derived from an infinite number of physical challenges where no selective mechanism is operative. Marines would be asked to perform feats randomly drawn from a list of simple, reproducible movements such as the squat, deadlift, sprint, push press, obstacle course, distance hike, or burpee to name a few. This assessment would measure individual capacity to perform these tasks in relation to every other Marine in the Marine Corps and not against a specific standard. The implication here is that capacity is a measure of an ability to perform assigned tasks, even unfamiliar tasks, tasks combined in infinitely varying combinations. In practice, this would encourage the Marine to disinvest in any set notions of sets, rest periods, reps, exercises, order of exercises, routines, or periodization during physical training. Nature and especially combat frequently provides largely unforeseeable challenges; training for it requires broad and constantly varied stimuli.²⁸

While “resilient” is directly correlated to the smart and fit categories above (i.e. the higher the acuity and fitness levels, the more resilient an individual is assumed to be), it is also directly related to “disciplined, and able to adapt.” All three of these criteria are found in the concept of morale, known popularly as “esprit de corps.” Esprit de corps is the capacity of a

group's members to maintain belief in an institution or goal, particularly in the face of opposition or hardship.²⁹ It is often referenced by authority figures as a generic value judgment of willpower, obedience, and self-discipline.

Of all components of personnel analytics listed thus far, esprit de corps would require the most qualitative data since belief, discipline, and adaptability are hard to quantify. Furthermore, studies show that a collective group of highly trained and highly educated individuals who have never worked together before are a lot less resilient than a group who has worked together for months on end. The opposite appears to also be true. A group that has worked together for too long and has developed bad habits may exhibit signs of negative esprit de corps to the point of failure.³⁰

As stated above, qualitative observations are more subjective. They are inherently biased by the schema, judgement, and reference point of the observer.³¹ As such, any qualitative assessment such as esprit de corps would require as many perspectives as possible to discern maximum validity. These perspectives may include data from 360-degree leadership assessments, command climate surveys, and qualified evaluator assessments from individuals outside of the assessed chain of command at a minimum. These assessments could be added to MCTIMS at standard intervals or immediately following every major training or readiness exercise. Similar to the automatic notification messages listed above, anytime the system correlates an extreme shift in either a positive or negative direction should trigger a message to key members of the individual's or unit's chain of command for inquiry purposes.

Ideally, any personnel analytics model, such as the one hypothesized above would evolve over time as well as throughout an individual's career, weighing applicable skills and attributes according to increased rank and responsibility. Whether or not all of this data is

correlated into an overall score or if one category is weighted differently than another at certain points of a career or by MOS is beyond the scope of this paper. The idea is to highlight the potential and possibilities of personnel analytics, as well as the need to include quantitative data to current Marine Corps assessments.

Conclusions

As outlined in Marine Corps Doctrinal Publication, *MCDP 1*, war is fundamentally a social process. It is a violent clash of wills, each trying to impose itself on the other.³² Like baseball, these independent and often irreconcilable wills are not monolithic forces that are rigidly defined or relatively stable. They constitute highly adaptive, complex systems, each unfolding in fluid, time-competitive environments characterized by friction, uncertainty, and chaos. Outcomes are often disproportionate to effort, yet all involve physical, mental, and moral forces.

Discussion about what makes a good soldier and the development of martial skill has been an ongoing debate for millennia. Alcibiades, when describing his mentor Socrates in battle, remarked of “a formidable figure,” whose “bearing made the enemy leave him alone.”³³ Alexander, Hannibal, Caesar, Gustavus Adolfus, Frederick the Great, and Napoleon all embodied and transcribed the qualities required for success on the battlefields of their day. Carl Von Clausewitz in his 1832 treatise *On War* defined military genius as “the inquiring rather than the creative mind, the comprehensive rather than the specialized approach, the calm rather than the excitable head.”³⁴

The Marine Corps may choose or be directed to adopt detailed personnel analytics in the future. Personnel analytics, as outlined above, has the potential to bring objectivity to organizational management by using metrics to challenge conventional wisdom. Such

objectivity may enable future commanders, monitors, and selection boards to make more informed personnel decisions. Senior commanders, similar to general managers in baseball, could match people to requirements based on actual performance data. Marines of all ranks could make more informed decisions about where to focus their individual training and practice efforts based on comparative assessment data. Technology now allows the Marine Corps to gather and store information—a lot of information—that is like nothing the corps or our broader society has experienced.

This emergence creates a unique dilemma for service leadership. Information access is certainly a significant aspect of decision-making. However, as outlined in Marine Corps Doctrinal Publication, *MCDP 2*, information is unevaluated material that must be combined, compared, analyzed, and evaluated to be given meaning.³⁵ Incorporating the use of personnel analytics, whether to augment existing evaluation systems or to replace them entirely will be a significant change to the existing methodologies and therefore should occur incrementally. Ideally, the first step would be to conduct a long-term experiment with a specific unit designed to test and evaluate the validity and efficacy of initial reporting policies and MCTIMS suitability. Second, and most importantly, this experiment would also discern how the data collection correlates to operational output and capacity. Finally, the future Marine Corps approach should be compared to existing analytical programs such as the Air Force Automated Records Management System (ARMS LC) to see where potential collaborative efforts could result in time, risk, and cost savings.

As General Neller argues, “the future fight will involve rapidly changing and evolving technologies and concepts, which will force us to be more agile, flexible and adaptable.”³⁶ Inherent in this statement is the requirement to continually challenge institutional approaches and

paradigms in order to stay ahead and succeed. Billy Beane demonstrated one way to do this is to embrace rapidly evolving technology when forced to be more agile, flexible, and adaptable. He did it by using metrics to challenge conventional thought in a traditional organization. His approach presents a unique case study worthy of future exploration within the Marine Corps.

During this exploration, many tenured personnel will argue that expert judgment is the best way to identify and retain quality Marines. While certainly valid, the ability to make considered decisions or come to sensible conclusions requires accurate information. Personnel analytics does not replace judgment, it only adds to the quantity and quality of information; the type of information that might just translate into superior operational performance and the realization of untapped potential.

Endnotes

- ¹ Michael Lewis, *Moneyball: The Art of Winning an Unfair Game* (New York: W. W. Norton and Company, 2003), 90.
- ² Headquarters Department of the Army, *Counterinsurgency*, December 15, 2006
- ³ “Who will fight the next war? Failures in Iraq and Afghanistan have widened the gulf between most Americans and the armed forces.” *The Economist*. (October 24, 2015); 2.
- ⁴ Ron Kohavi, Neal J. Rothleder and Evangelous Simoudis. “Emerging Trends in Business Analytics.” *Communications of the ACM* 45, no. 8: 45–48.
- ⁵ “Quantitative.” Oxforddictionaries.com. Accessed April 28, 2016.
http://www.oxforddictionaries.com/us/definition/american_english/quantitative
- ⁶ “Objective.” Oxforddictionaries.com. Accessed April 28, 2016.
http://www.oxforddictionaries.com/us/definition/american_english/objective
- ⁷ *Ibid.*
- ⁸ Don Peck. “They’re Watching You at Work.” *The Atlantic* (December 2013): 3.
- ⁹ *Ibid.*
- ¹⁰ *Ibid.*
- ¹¹ Peck, pg. 6.
- ¹² Peck, pg. 5-6.
- ¹³ Wray Johnson, A Primer on Critical Thinking.
- ¹⁴ Peck, pg. 7.
- ¹⁵ Wray Johnson, A Primer on Critical Thinking.
- ¹⁶ Commandant of the Marine Corps, *Marine Corps Individual Records Administration Manual*, July 14, 2000.
- ¹⁷ Shannon Phillips and Adam Clemens, “The Fitness Report System for Marine Officers: Prior Research.” *Center for Naval Analysis* (November 2011) https://www.cna.org/CNA_files/PDF/D0026273.A1.pdf
- ¹⁸ *Ibid.*
- ¹⁹ Greg Glassman. “What is Fitness?” *The Crossfit Journal* (October 2002): 2.
- ²⁰ Commandant of the Marine Corps, *Infantry Training and Readiness Manual*, August 30, 2015.
- ²¹ Greg Glassman. “What is Fitness?” *The Crossfit Journal* (October 2002): 2.
- ²² Commandant of the Marine Corps. *FRAGO 01/2016: Advance to Contact*. January 19, 2016, pg 2.
<http://www.hqmc.marines.mil/Portals/142/Docs/CMC%20FRAGO%2001%2019JAN16.pdf>
- ²³ *FRAGO 01/2016*, pg 2.
- ²⁴ “Smart.” Merriam-Webster.com. Accessed February 29, 2016. <http://www.merriam-webster.com/dictionary/smart>.
- ²⁵ <http://www.lumosity.com>
- ²⁶ “Fit.” Merriam-Webster.com. Accessed February 29, 2016. <http://www.merriam-webster.com/dictionary/fit>.
- ²⁷ Greg Glassman. “What is Fitness?” *The Crossfit Journal* (October 2002): 2.
- ²⁸ Glassman, 3.
- ²⁹ Headquarters Marine Corps, *Warfighting*, (Washington DC, 1997).
- ³⁰ Tuckman, Bruce W., “Developing Sequence in Small Groups” *Psychological Bulletin* (June 1965): 384-399.
<http://dx.doi.org/10.1037/h0022100>
- ³¹ Wray Johnson, A Primer on Critical Thinking.
- ³² Headquarters US Marine Corps, *Warfighting*, MCDP 1 (Washington, DC: US Marine Corps, June 20, 1997), 3.
- ³³ Plato, *The Symposium*. Trans. Paul Woodruff and Alexander Nehamas (Hackett 1900), 65.
- ³⁴ Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret, trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), 112.
- ³⁵ Headquarters Marine Corps, *Intelligence*, MCDP 2 (Washington, DC: US Marine Corps, June 7, 1997), 7.
- ³⁶ Commandant of the Marine Corps. *FRAGO 01/2016: Advance to Contact*. January 19, 2016, pg 2.
<http://www.hqmc.marines.mil/Portals/142/Docs/CMC%20FRAGO%2001%2019JAN16.pdf>

Bibliography

- Atkinson, Simon R. and Moffat, James. *The Agile Organization: From Informal Networks to Complex Effects and Agility*. Washington, DC: Command and Control Research Program (CCRP), 2005.
- Albrecht, Joseph H. "Understanding and Developing Adaptive Leadership during Pre-Commissioning." Monograph. School of Advanced Military Studies, 2010.
- Blaber, Pete. *The Mission, The Men and Me: Lessons from a Former Delta Force Commander*. California: Berkeley, 2010.
- Boyd, John R. "Patterns of Conflict." Unpublished briefing, last modified in 1986. Retrieved from <http://dnipogo.org/john-r-boyd/>
- Boyd, John R. "The Essence of Winning and Losing." Unpublished briefing, last modified in 1996. Retrieved from <http://dnipogo.org/john-r-boyd/>
- Clausewitz, Carl von. *On War*. Edited by Michael Howard and Peter Paret. Translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1984.
- Collins, J. *Good to Great: Why Some Companies Make the Leap...and Others Don't*. New York: HarperCollins, 2001.
- Commandant of the Marine Corps. *Infantry Training and Readiness Manual*. NAVMC 3400.44B, August 30, 2013. <http://www.marines.mil/Portals/59/Publications/NAVMC%203500.44B.pdf>
- Commandant of the Marine Corps. *Marine Corps Common Skills Training and Readiness Manual*. NAVMC 3500.18B, May 10, 2012. http://www.marines.mil/Portals/59/Publications/NAVMC%203500_18B%20PT%201.pdf
- Commandant of the Marine Corps. *Marine Corps Common Skills Training and Readiness Manual, Volume 2*. NAVMC 3500.19, February 12, 2008. <http://www.marines.mil/Portals/59/Publications/NAVMC%203500.19.pdf>
- Divine, Mark. *The Way of the Seal: Think Like an Elite Warrior to Lead and Succeed*. New York: Reader's Digest, 2013.
- Gladwell, Malcolm. *The Tipping Point: How Little Things Can Make A Big Difference*. Boston: Little Brown, 2002.
- Gladwell, Malcolm. *Blink: The Power of Thinking Without Thinking*. Boston: Little Brown, 2007.

-
- Gladwell, Malcolm. *What The Dog Saw: And Other Adventures*. Boston: Little Brown, 2010.
- Gladwell, Malcolm. *Outliers: The Story of Success*. Boston: Little Brown, 2011.
- Gladwell, Malcolm. *David and Goliath: Underdogs, Misfits, and the Art of Battling Giants*. Boston: Little Brown, 2015.
- Hall, Edward T. *Beyond Culture*. New York: Random House, 1989.
- Hammes, Thomas, X. *The Sling and The Stone: On war in the 21st century*. Minnesota: Zenith, 2004.
- Headquarters U.S. Marine Corps. *Leading Marines*. MCWP 6-11. Washington, DC: Headquarters U.S. Marine Corps, August 1, 2014.
- Headquarters U.S. Marine Corps. *Sustaining the Transformation*. MCRP 6-11D. Washington, DC: Headquarters U.S. Marine Corps, October 6, 2014.
- Heames, Joyce Thompson, and Michael Harvey. "The Evolution of the Concept of the 'Executive' from the 20th Century Manager to the 21st Century Global Leader." *Journal of Leadership and Organizational Studies* 13, no. 2 (2006): <http://jlo.sagepub.com/>.
- Klein, Gary. *Seeing What Others Don't: The Remarkable Ways We Gain Insights*. New York, Public Affairs, 2013.
- Klein, Gary. *Sources of Power: How People Make Decision*. Massachusetts: MIT Press, 1999.
- Lewis, Michael. *Moneyball: The Art of Winning an Unfair Game*. New York: W.W. Norton and Company, 2004.
- Peck, Don. "They're Watching You at Work." *The Atlantic*, December 2013. <http://www.theatlantic.com/magazine/archive/2013/12/theyre-watching-you-at-work/354681/>
- Vandergriff, Donald. *Path to Victory: America's Army and the Revolution in Human Affairs*. Lexington, KY, 2013.
- Vandergriff, Donald. *Raising the Bar*. Washington, DC: Center for Defense Information, 2006
- Vandergriff, Donald. "Adopting Mission Command: Developing Leaders to Operation in a Superior Command Climate." Unpublished manuscript, last modified January 15, 2015. Microsoft Word File.