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What Force and Metrics For What End –
Characterizing the Future Leadership & Force

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What Force and Metrics For What End – Characterizing the Future Leadership & Force

ABSTRACT

The challenge of the uncertain future causes many aspects of the military, indeed including the government as a whole, to be re-examined to determine what type of leadership and forces are needed for that uncertain future.

Many of the preparations and transformation efforts focus on the systems and equipment that will be used and employed; that is appropriate, up to a point. There is some discussion and analysis done on the teams, social interactions and coordination of the operators of those systems in many venues beyond the Command and Control Research Program (CCRP).

This paper will explore several factors which are not regularly placed on the table with the hardware and systems: ethics, spectrum of education, empowerment and accountability, and, capability and coordination of actions; for what objective: the largest common good; what interaction points: forces, locations, and entities which generate limited common good; and, suggested metric: general four-level framework of relative values, melded to the above items.

INTRODUCTION & BACKGROUND

Many of our national and military policy and guidance documents point out the need for adaptation, innovation, and capabilities development for planning for and dealing with an uncertain future. (See NDS (2005); and, QDR (2006), as examples). The details presented are regularly cited and coached in the aspects of the systems, technologies, and advisory/planning tools. While the points of personnel and personal development are mentioned via co-evolution with the other aspects, they are only occasionally, if at all, emphasized and categorized via a set of detailed capabilities/outcomes framework and breakdown structure a la an 'influence net' of the capabilities and characteristics of the 'leadership and force(s)' for that uncertain future.

Whether framed as the Global War on Terrorism, nation building, or international/national humanitarian assistance/disaster response, all leadership personnel and intervention/interaction teams, staffs, and forces have a great challenge confronting them. Yet prior to those individuals being in-place, they must be trained, educated, and prepared to act and be accountable within the full spectrum of possible uncertain future assignments and circumstances. (This is a flavor of the seven factors and characteristics of Joint Vision 2010/2020 (1996, 2000) which must be developed and delivered in a co-evolutionary manner.)

To frame that cadre of individuals (the 'leadership and forces') the question (paired query) of 'what force/group is needed for what employment purpose?' must be asked and have a detailed response. Some may have specific ideas for responding to that paired query, and it must be noted that those will fill the full spectrum of options when considering uncertain futures. Yet that paired query is not the only one that must be posed for developing further granularity regarding 'what force/group . . . what employment purpose?'. A balancing paired query is 'what are the appropriate employment action points for what future desired outcome/future state?' As

can be expected, again, there are many differing opinions on action points and desired future outcomes/states that are espoused through media, scholarly, and governmental channels.

Why ask these particular questions, when the volumes of guidance and doctrine are published and endorsed at many different national and public levels and delivery parts of the big picture. The simple, yet complex, answer is that some aspects of those guidance and doctrine volumes are not adequately addressing the very long term outcomes and objectives, along with the fundamental features and characteristics of the 'leadership and force' for that long term uncertain future – they address aspects of symptoms vice aspects of root characteristics and principles. Further, some of the employed measurement factors seem to be based on a too short or narrow perspective, compared to a broad based implementation by the 'leadership and force' individuals. Before going any further the term 'leadership and force' must be clarified. In the author's application within this paper, leadership is not only the traditional leadership individuals and positions, but also the leadership efforts of each and every individual who has sway within the leadership continuum; and force, is not specifically limited to the application of hard vice soft power as tools, but also the organizational structure of the groups of individuals and their methods of interaction of those organizations at any size.

The author feels that where much has been studied and analyzed on the decision and support tools, and their application, along with aspects of the social and task loading of small groups, there has been a lack of reflection upon many other sources of ideas and possibilities, and commentaries regarding the opportunities for the uncertain future shaped by 'leadership and force' personnel. Many of the CCRP papers and presentations address aspects of the above, though from the authors exposure to them, few have gone beyond the basic analysis and understanding points, to establish the framework of 'leadership and force' development and characteristics to support coordinated action on the root causes and shortfalls toward the removal and remediation of those shortfalls and the reduction of future uncertainty.

The 'leadership and force' are being transformed, which is a basic factor of the JV-2010/2020doctrine picture of co-evolution. Fuentes' (2005) addresses a small aspect of that while discussing potential results of the 18-month study of whether the United States Marine Corps (USMC) would formally designate two detachments for transfer to Special Operations Command (SOCOM). Though the article implied this transfer might not to be realized, the tempo and style of operations within Operation Enduring Freedom and Operation Iraqi Freedom (OEF & OIF) re-enforce the importance and need for additional SOCOM forces and capabilities. (Some even may feel that ALL military forces should be SOCOM like, this author points out that it will take more than JUST the co-evolution of the military, it should be considered a characteristic of ALL 'leadership and force' personnel.) (Note: In October 2005, the study report supported a transfer of USMC detachment(s) to SOCOM (Smith, 2005), and the FY2007 DoD budget includes a proposal to 'Complete establishment of Marine Corps Special Operations Command' (DOD Budget, 2006)).

Dr. Russell's Plenary Presentation (2003), 'Project Alpha: A Modest Contribution to Defense Transformation', pointed out that during the 'discovery' phase of the project the Futurists and Science Fiction community were sources of ideas and thoughts. Additional cited sources were: the J9 Concepts, Real-World Operations, Science Boards, Industry, Technology, Academia,

Senior Guidance, Seminars/work studies/working groups, Joint and Service Visions, Professional & Popular Literature, and the group of Research Laboratories, National Laboratories, and Federally Funded Research and Development Centers (FFRDCs). While extensive, this listing may be considered as not including past professional writing and other older literature, which can also be sources. In many cases, most more current ideas can also be found in the older literature and journal sources – only with slightly different terms of reference.

Thus the intent is to address the two (2) questions within the aspects of the present conditions and 'leadership and force' for the future, as well as propose, application-interaction points, and purpose/outcome objective, by way of source examples from science fiction, contemporary, and older literature as intimated by Russell (2003). Further these same sources offer ideas for another flavor of metrics for formulating courses of actions, action points, and evaluation criteria for costs and outcomes that can be related to influence nets.

QUESTION 1: 'What force/group is needed; for what employment purpose?'

With respect to Question 1 (first paired query), the author notes that it (and Question 2), with associated discussions are not new, and many may agree with this point. The questions have been discussed and debated in almost all venues of our lives. The author's response to Question 1 is: the 'leadership and forces' needs to have special characteristics such as: ethical, enlightened through broad based education and experience base, and empowered to act at all levels (individually and collectively), tactically, operationally, and strategically. These characteristics can be found in the discussions of ethics within Robert Heinlein's (1959, 1968) *Starship Troopers*; and, possible metrics such as presented in Isaac Asimov's three laws of robotics plus the zeroth law of the Robots and Foundation Series of books (addressed in sections below). The suggested education might have aspects of the spectrum of philosophies illustrated by Thomas Hobbes' (1651, 1985) listing within *Leviathan*, which is a listing of the 'Books of Philosophy' (representing collective knowledge). The 'leadership and force' action individuals might have the ability, capability, and coordination skills akin to the warriors and leaders described in Gordon Dickson's (1959, 1976) *Dorsai!*, within his Childe Series of books. Interestingly, the USMC 'strategic corporal' and the Army's 'Army of One' concepts seem to evoke and point to these same factors. (These sources may seem far-fetched as some may point out, though the author understands that *Starship Troopers* has been used at the USMC Basic School for junior officers. (also see Russell, 2003, mentioned above.))

Discussing future joint ground forces, the QDR states: "The result will be a new breed of warrior able to move more easily between disparate mission sets while preserving their depth of skill in primary specialties. Future warriors will be as proficient in irregular operations, including counterinsurgency and stabilization operations, as they are today in high-intensity combat." (QDR, 2006, p. 42) Thus there is an identified future desire for framing the future 'leadership and force', albeit, maybe on an unspecified, and potentially 'shorter' time scale than some of the sources of material imply.

While this quote offers a future capabilities framework, it does not necessarily include some of the needed additional detailed aspects that characterize the stated and implied capabilities. The following discussion offers thoughts (and sources) related to that characterization.

The author suggests that what may be needed is a 'leadership and forces' cadre that is more educated and fully rounded, as represented by the individual soldiers with the ethics (and franchise) system introduced in Robert Heinlein's *Starship Troopers* (1959, 1968). Within that system the veterans are teaching, developing, and monitoring the leaders and voters of the future (our 'leadership and force'). A 'leadership and forces' cadre that develop the moral fortitude for place the whole ahead of self, and thus look out for the team/group interests ahead of individual interests when choosing courses of action. Likewise those individuals who served the common good of the whole were entitled to vote for whole, ONLY after they have stepped down from serving the whole group. (They have a code of not leaving compatriots behind on the battlefield, as well as self-regulation. That is self-regulation to the extent of trail, judgment, and punishment, including death, for egregious acts that bring dishonor on the mobile infantry.)

But what about how the 'leadership and forces' respond and adapt? While discussed within many policy and doctrine papers, the author would like to draw attention to this point and factor as initially presented through the character of General Donal Graeme by Gordon Dickson (1959, 1976) in *Dorsai!*. Dickson has introduced the future development path of the Dorsai warriors and fighters for the betterment of the human race, i.e., for a larger common good. (Note: *Dorsai!* is only one of some 11 books of the Childe Series written to outline a hoped for transformation of the human race and world presented as different races on different worlds struggling to survive, and carry out commerce, and move to a better future for all. That is a continuing, ongoing journey of growth, adaptation, and improvement.)

The particular point from Dickson and the *Dorsai!* (original title of that book was *'The Genetic General'*), is introduced as the Dorsai warriors and along with their leader who operate not only on confrontation, but through understanding how to act on the perceptions of the opposition so that the opposition makes it easy for the Dorsai warriors to defeat them and maneuver them into surrender. This represents aspects of employing adaptive tactics, techniques, and procedures as the circumstances dictate.

In a subsequent book another character, Cletus Grahame (Dickson, *Tactics of Mistake*, 1970, 1972) fully introduces the description of the fighting forces operating in completely coordinated groups: a three member squad acts as a completely integrated whole, then the two or three squads operates as completely integrated platoons, then the two or three platoons operate as completely integrated companies!!

> "Our fighting units are going to bear more resemblance to a group of athletes in a team sport than they are to the old type of fighting unit. The tactics they're going to be using - my tactics - aren't designed for structured armies in solid confrontation with each other. Instead, they're designed to be useful in what seems to be a loose group of almost independently acting units, the effects of which are coordinated not so much by the hierarchy of command as by the fact that, like members of a team, they're familiar with each other and can anticipate what their teammates will do in response to their own actions and the general situation." (Dickson, 1970, 1972, p. 152)

This degree of coordination is further explained:

> ". . . from the individual right up to the largest organization within the DORSAI military command, each unit should be capable of reacting like a single member of a team made up of other members equal in size and importance to himself. That is, any one of the three soldiers in any given half squad should be able to operate in perfect unison with the other two members of his team with no more communication that a few code words or signals that would cue the others to standard actions or responses to any given situation. Similarly, the two teams in any squad should be able to work as partners with no more than a few code words or signals." Up through squads of a group, two groups of a single command, and the commandants of the associated commands. (Dickson, 1970, 1972, p. 152-3)

All with clearly and fully understood methods, tools, capabilities, and inter-relationships such that they anticipated and automatically backed each up at squad, platoon, company, etc. levels, for the expected mission, which they were addressing, to produce the outcome that was desired. Thus the leader set the objective and desired outcome, the rest of the organization completed the execution with limited to no further interactions to achieve the desired result or outcome.

Both of these quotes and discussion mesh with the previous joint ground forces QDR quote and that which follows:

". . . will be modular in structure at all levels, largely self-sustaining, and capable of operating both in traditional formations as well as disaggregating into smaller, autonomous units." (QRD, 2006, p. 42)

The author notes the similarity, and posits that like the journey described in the Childe series, the QDR presents a step in the continuing transformation and movement to a fully integrated 'leadership and force' for the future which may ultimately include the complete population.

Yet more is required to characterize the future set of 'leadership and forces', specifically related to education and ethics, which will now be addressed.

Cletus' efforts mentioned above through the tactics (think current TTP's, Doctrine, and concepts of operations framework) for the Dorsai represents a total of twenty volumes. That the set is described a possibly not meaning much to others, is an implication of operating at another plane of understanding, and working at the perceptions of the opposition (or destabilizing actors and forces) so that they practically defeat themselves while being maneuvered by the Dorsai. These volumes are only part of the education of the Dorsai. (Note: for this discussion, Dorsai could just as easily be 'leadership and force' of the future.)

> " . . . [it's time for the new world to be free . . . and make themselves into what they're meant to be."] . . . to allow writing "the last sixteen volumes [which] will be tactics only the Dorsai-to-come can use . . . no use to ordinary military, [back on Earth.] Only with a new sort of soldier . . . with restraint . . . obligation . . . and mind and body . . ." one that will help the human race as a whole and continue the evolution to fight evil. (Dickson, 1970, 1972, p. 221.)

This then is a description that parallels that of the joint ground force within the QDR mentioned above.

This sets up the perspective of outlook and ethics, along with a style of course of action coordination, and opens the point of Question 2: 'what action points and what end/outcome'.

For how to characterize the knowledge and education framework – the author proposes starting with Thomas Hobbes' 'Books of Philosophy' for well rounded education and exposure.

That is an education spread that encompasses the span of Philosophy and sub-philosophies presented in Hobbes' *Leviathan* (page 149 of the Penguin Classics 1985 version). (Reproduced as Figure 1, following.) This framework represents a very well rounded founding of knowledge in all areas, which then supports the selection of the most appropriate path of interaction toward the prevention of bad things or the facilitating of good things. This comes back to the original point regarding influence nets, which are in some ways the current version of the 1950's and Isaac Asimov's 'psycho-history approach' to marshalling events and interactions to produce a desired outcome.

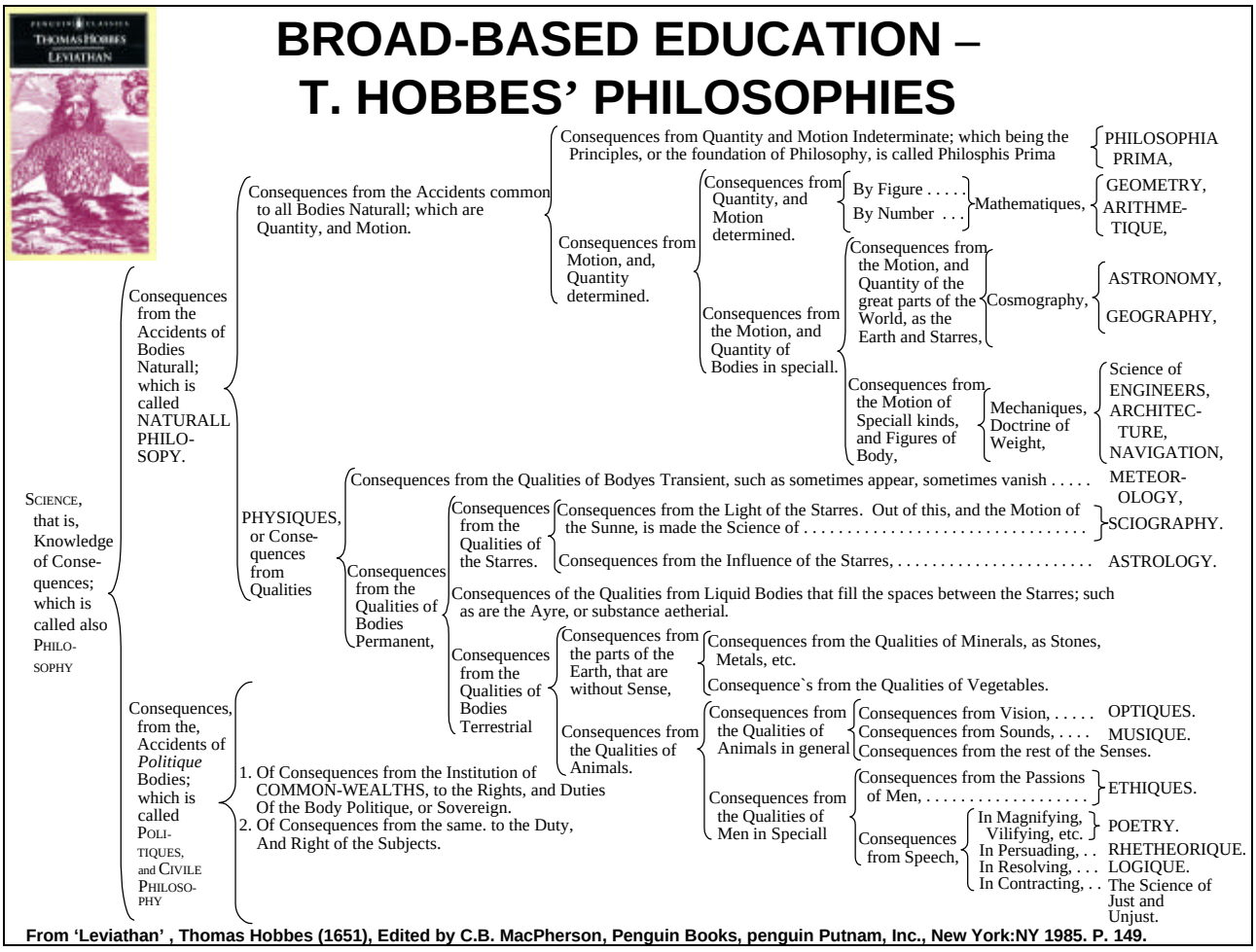

Figure 1 - Broad-Based Education - T. Hobbes' Philosophies

Metaphorically this is patching the boat (working on action points) to remove obstacles to stability and growth, and allow over all growth to raise all – looking out for the overall common good. The framework for evaluation is the overall common good, paralleling Norton's model (Figure 2) [moving to the top row for nations and regions], and evaluated by modified Robotics

Laws (Figure 3, contains the unmodified Laws). (Though mentioning Figures 2 and 3 at this point, the author provides their formal introduction within the Question 2 section below.)

Going back to the Dorsai series source, General Grahame near the end of the book is confronted by his protagonist at his (the General's) house on his own planet. The reader is somewhat expecting that the General is about to be defeated, though the discussion with the protagonist reveals that the General is not worried. The protagonists forces are completely defeated at the time of the discussion 'by merely the old women and men, along with the children of the Dorsai, who are present on the planet, all at the simple behest and direction to 'Defend Dorsai!' which the General had issued. Thus those that had essentially been dismissed as not being a threat defeated the protagonist, he is defeated by operating against his perceptions. The Dorsai 'old women and men, along with the children' ('leadership and forces') are those actors/interventionists who chose the appropriate point and paths of action, as in this case they all acted in concert and unison for the directed action and desired outcome - the communicated larger principle and goal from Cletus Grahame. This symbolizes the style of action the future 'leadership and forces' could apply to the problems of instability and lack of growth which will be addressed within the Question 2 response – 'for what outcome/purpose?'

All of these factors can be mapped into the points included within the Joint Vision 2010/2020 short hand notation of seven focal areas: DOTML-PF: Doctrine, Organization, Training, Materiel, Leadership, People, and Facilities. These are: Joint **D**octrine, Agile **O**rganizations, Joint **T**raining, Enhanced **M**ateriel, Innovative **L**eadership and Education, High Quality **P**eople, and Requisite **F**acilities. They can then generate opportunities for action plans and influence nets to produce the 'leadership and forces' of the future.

The allusion is to marry the coordination and understanding aspects of the Dorsai and the moral ethics of the Starship Troopers' mobile infantry, which could accurately address the best course of action to produce the results that are desired. (Thus pointing to Question 2.) A force able to move easily between disparate missions as a team, and adjust/adapt according to the circumstances and general situation.

> " "We now must cover a broader piece of the entire spectrum of operations, and because we have a force that is going to face challenges that will be dynamic and will move across the various challenges of the spectrum, we'll need people that are learning and adaptive," Schoomaker said. This new breed of soldier, which Schoomaker dubbed the "pentathelete," will be skilled in his specific field but also be able to perform other functions, in case a need arises on the battlefield, he said. "It's about having very athletic people in very athletic organizations – people that can play multiple positions, that aren't defined very narrowly by specific military occupational specialty," he said." (Wood, 2006)

QUESTION 2: 'What are the appropriate employment action points; for what future desired outcome/future state?'

The action point the author would propose for the 'leadership and force(s)' are those destabilizing and non-integrating efforts and factors which detract from the health, welfare, happiness, and prosperity of the largest proportions of the population. The outcome desired is stability of growth and opportunity, and reasonable prosperity for all. This is akin to solving the

reasons for 'disconnectedness and isolation' which generate lash out reactions discussed by Thomas Barnett's (2003) *The Pentagon's New Map*, Thomas Friedman's (1996) *The Lexus and the Olive Tree*, and Samuel Huntington's (1996, 1997) *Clash of Civilizations*. The factors could be generalized as: those forces and actions generating the disconnected cadre of the world which are generating counter pressures and reactions to: the stability of growth; delivery of usual and customary governmental services for the health, welfare, and prosperity of the population at large; and detractions from the general well being of segments of the population, whether by lack of food, health care, education, necessities of life, oppression, or exploitation. This is relatively extensive and fundamental, yet those fundamental items are the type specifically noted by Hayes and Sands (1999) as critical to populations feeling satisfied and not threatened. When they are satisfied, there may well be less likelihood to lash out and attack others (internally or externally).

While Question 1 responded with characterizations of 'leadership and forces', having those entities available implies that they are to act for, on, or against something, for some outcome and purpose, i.e., literally Question 2. For the particular points to address or threaten, the author suggests as mentioned immediately above, those point(s) which are preventing the stability of growth and prosperity for the population of concern, as well as improving prospects for children survival and workforce employment, such that there is not the citizenry, institutional despair, and desolation of the poor faced with limited employment opportunities etc. Stated thus and in slightly different terms of reference, these are the points identified by Barnett, Friedman, and Huntington.

Barnett frames the points in groups which are integrated and non-integrated with the world economy, resources, investment flow, education development of the workforce, and similar factors. Aspects of his models have appeared as the 'arc of instability' within the Mediterranean/Africa, Middle East, Asia region; descriptions of failed states; and the analysis of foreign direct investment flows happening or not happening within this region.

Friedman (1996), addresses the model of globalization via seven useful metrics:

1) How Wired Is Your Country?;
2) How Fast Is Your Country?;
3) How Much Does Your Country Weigh?;
4) Does Your Country Dare To Be Open?;
5) How Good Is Your Country At Making Friends?;
6) Does Your Country's Management Get IT?; and,
7) How Good Is Your Country's Brand?

These are much like a flavor of the regularly released national statistics for economy, labor markets, un-employment, housing markets, etc., which are followed by differing sections of the national and international community. They are related to the globalization and free movement of: information & communications; finances and investment; and commerce and manufacturing; on a global interconnected basis, influenced by public opinion, performance, and perceptions. They can specifically be viewed as opportunity or gap metrics for which action plans or influence nets could be constructed to remove or reduce those gaps. Noting this style of action plan generation, the path can be followed with the problem areas identified by Barnett. It must be noted that there are many paths available that DO NOT include military forces.

Huntington, in the author's opinion, strikes a tone associated with population demographics and social interactions, which are linked to various aspects discussed by Barnett and Friedman. Thus Huntington adds another level of society and social aspects to those gaps and shortcomings. It is noted that the CCRP has been addressing several aspects of social and societal interactions within group dynamics of watch teams, as well as population sections via confrontation analysis. In many cases these are treated as single facets, with only occasional multidimensional implications included. This is where the truly hard component resides, as the challenges to act are determining the correct and best action points which are intimately connected at many levels and create a large multidimensional analysis problem. Yet progress is being realized through the efforts associated with colored Petri nets, Bayesian analysis, and influence net applications to produce desired outcomes and results which can be applied in larger contexts.

The Health of Cities
(By Extension – of Nations/Regions?)

	Government	Economy	Services	Security
Healthy ("Green")	Enacts effective legislation, directs resources, controls events in all portions of the city all the time. Not corrupt.	Robust. Significant foreign investment. Provides goods and services. Possesses stable and adequate tax base.	Complete range of services, including educational and cultural, available to all city residents.	Well regulated by professional, ethical police forces. Quick response to wide wide spectrum of requirements.
Marginal ("Yellow")	Exercises only "patchwork" or "diurnal" control. Highly corrupt.	Limited/no foreign investment. Subsidized or decaying industries and growing deficits.	Can manage minimal level of public health, hospital access, potable water, trash disposal.	Little regard for legality/human rights. Police often matched/ stymied by criminal "peers."
Going Feral ("Red")	At best has negotiated zones of control; at worst does not exist.	Either local subsistence industries or industry based on illegal commerce.	Intermittent to non-Existent power and water. Those who can afford to will privately contract	Nonexistent. Security is attained through private means or paying protection.

Source: Norton, Richard J. 'Feral Cities', Naval War College Review, Autumn 2003, Volume LVI, Number 4, p.101. Figure.

Figure 2 - The Health of Cities (By Extension - of Nations/Regions?)

Another point of action would be the states which are having difficulties providing the 'usual and customary governmental services of health, education, social support, etc.' which provide the stability for the population. Thus when not providing them, they are not blocking the door way for various styles of 'pied pipers' to call the tune and steal the parade away from the 'general overall common good'. This is where Norton (2003) with his model of 'Feral Cities' has the beginnings of the model which the author proposes can be extended to apply to 'regions and nations' associated with safety of the population at large, the rule of law, and providing the 'usual and customary services' of governments which citizens and groups come to expect of 'leadership and forces'. Figure 2 (above) offers the basic framework for characterizing cities; the author posits that only a few words require changes to apply it to the larger regional or global

community groups identified by Barnett, Friedman, and Huntington. Specifically, changing 'city' to 'region/nation', and 'police, police forces' with 'leadership and force', with the recognition that a 'Going Feral' entity likely will not have 'central coordination'. (See slide 20 of presentation.) The gap analysis mentioned above would offer opportunities for plans to move from the lower sections of the figure toward the upper row, and could offer improvements in connectedness or integration discussed by Barnett, improved metrics discussed by Friedman, and reduced societal tensions pointed out by Huntington. In short, patching the boat and helping to raise the well being of the population as a whole.

Having said that, the well rounded individual described above would be part of the team which would address the most appropriate points within the cause and effect chain that is preventing the stability of growth and prosperity mentioned (the desired outcome), to choose the points of action and interaction. Not all the points need to be addressed through hard power; many can and should be addressed via soft power with other than military capabilities, while retaining the preparedness of the hard forces for the next step. (Note these types of interactions for outcomes come from considerations of 'influence nets' and 'colored Petri-dish' interactions analysis, and have flavors of 'effects based operations/outcomes' approach to planning actions and operations.)

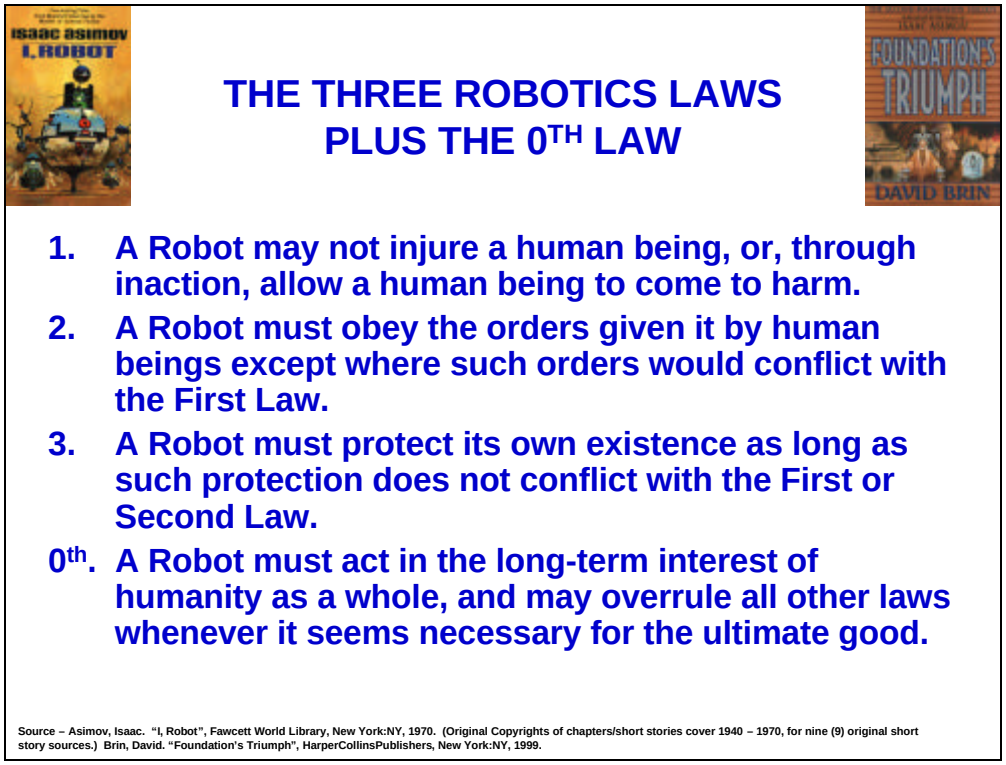

Figure 3 - The Three Robotics Laws Plus the 0th law

Regarding the almost rhetorical part of Question 2: 'for what outcome?' the author returns to the point mentioned previously of 'removing the obstacles to 'stability and growth' '. That outcome can be viewed in many ways, implied within the prior sections, and one must remember that it will vary with respect to the differing objectives of groups and organizations being considered. The author returns to a modified variety of the '3 Laws of Robotics + the Zeroth Law' (Asimov,

1940, 1970) (Brin, 1999) [Representing the Robots & Foundation Series, some twenty (20) books.] which could place the outcome as 'preventing or limiting hardship and destruction of the well being of the population at large'. Figure 3 presents those basic four (4) laws introduced, discussed, and utilized within the series of books. In evolving that framework as discussed within the paper, the author suggests that the phrase 'A Robot' would be replaced with 'The leadership and force' and that the phrase 'a human being' be replaced with 'the long term good'. (Some adjustment of grammar is also needed.) Thus the four laws could be restated as follows (also see Slide 18 of presentation):

> "1. The 'leadership and force' may not injure the 'long-term good', or, through inaction, allow the 'long-term good' to come to harm.
> 2. The 'leadership and force' must obey the orders given them for the 'long-term good' except where such orders would conflict with the First Law.
> 3. The 'leadership and force' must protect their own existence as long as such protection does not conflict with the First or Second Law.
> 0th. The 'leadership and force' must act in the larger common good of humanity as a whole, and may overrule all other laws whenever it seems necessary for the ultimate good." (Brin, 1999)

It should be noted that there is restraint and responsibility, along with accountability implied within Law 3 and the Zeroth (0th) Law, which is akin to the "new sort of soldier . . . with restraint . . . obligation . . . and mind and body . . ." (Dickson, 1970, 1972 , p. 221) capacity quoted above within the Question 1 discussion. To state this another way, the new 'leadership and force' could be considered as starting down the path to the QDR's new fighters of the future, and as offered by the author as a mix of Dorsai and Mobile infantry characteristics; almost as a merger of the Army's concept of 'A Force of One' with the developing Marine Corps concept of the 'strategic corporal'.

To get to that outcome would also require the capacities of the people who are the actors and interventionists ('leaders and force(s)' introduced above) is also an included outcome. With those capabilities they would be employing all the types and styles of tools and mechanisms: education, food, resource management, medicine, law, finance, commerce, press & media, family ties, etc., which make up the spectrum of possible avenues of intervention. To understand those paths the group of individuals must have a spectrum of education and knowledge along the lines shown in Figure 1. (The author notes that President Jefferson fostered a similar depth of knowledge through the general education provided to Meriwether Lewis prior to the exploration to the Pacific Northwest (Ambrose, 1996).)

Thus the outcome and result has been introduced at several levels. These point out a particular challenge to think and act within a larger context, along with the imperative of the current situations, with the ability to concurrently step back and have a larger and longer view of actions, consequences, and responsibilities as well. The discussions of these capabilities, capacities, action points, and outcomes also point out where there are shortfalls. These shortfalls generate the framework for action to start closing those shortfalls or gaps, and that framework can be moved into the cause-and-effect realm of influence nets and action plans for results in the near, intermediate, and long term. This points the way to the next section where several sources of the metrics and shortfall information will be discussed and summarized.

METRIC IDEAS

In the prior sections many ideas and aspects of frameworks for evaluation have been presented and discussed. These range through the type of 'leadership and forces' for the future, along with some characterization of aspects their of education, competence, coordination, understanding, morals, and ethics. Further discussion has included the action points and areas for that 'leadership and forces', along with some points about the type of objective or outcome that those action points would address and act upon. As discussed and studied within much of the community of the CCRP, there are tools available to measure the differences between present and future conditions and perceptions, opinions regarding those conditions, as well as determining what future consensus state or outcome is desired. In this section the author will address several of the more obvious aspects of the challenges and problem area shortfalls, with the assistance of some sources of data describing various world conditions, linked to the larger framework and prior discussions.

Data and Gaps as 'action points'

The starting point here is the sets of information presented by Barnett (2003), Friedman (1996), and Huntington (1996, 1997), which establish some flavors of data regarding gaps between differing sections of the populations and groups of the world. The Barnett framework is rather extensive, though focuses on many of the regular international relations and geographical characteristics to broadly characterize the differences between large sections of the world's areas and populations. This has some merit, though may be considered by some as painting a small part of the picture. Likewise, Friedman's comparative parameters with their granularity are a type of reflection of the more modern recognition of depth and breadth of the world communities of information, finance, and commerce integration under the rubric of 'globalization'. This offers another dimension to the factors presented by Barnett, and points out other sets of gaps and potential action areas. A last (though not all inclusive) example of characterization is that developed and presented by Huntington, who using demographics and population trends along with cultural factors offers a perspective of analysis of social and ethnic interactions based to some degree on conflict and non-conflict between regional, ethnic, and religious groupings. These criteria offer a whole different dimension of evaluating gaps in perceptions and interactions that can be good and improved, or poor and improved as well. All these offer difference metrics for measurement with differing tools and methods, which then can be analyzed for action opportunities and strategies, and contributions to the improved outcomes. In this case, as presented earlier in this paper, the action points and outcomes could be to reduce destabilizing influences, and conditions which prevent the general improvement of delivery of governmental and societal services and well-being of the world population.

Progress Paths & Courses of Actions

Having set up that suggested framework of potential metrics, the question becomes how to evaluate the options and progress toward the improvements and future outcomes. Here the author returns to the introduction of the example derived from Asimov (1940, 1970) and Brin (1999) 'four laws of robotics' provided in Figure 3 (with the discussion which follows its introduction above), along with the assisting matrix of Norton (2003) (shown in Figure 2 and modified in slide 20 of the presentation). The Asimov and Brin modified framework offers a sense of 'common good for humanity' approach that is itself rather simplistic and very complex

at the same time. That is, it is simplistic in statement, and exceedingly complex in its application and interpretation. The Norton framework adjusted from cities to 'nations and regions' offers some generalization and assistance with choosing paths and investment opportunities for improving conditions. Some can rightly say this is simply a very small step in the direction of developing an accepted set and framework of education, training, evaluation, and feedback tools along with the methods for applying the adapted 'four laws of robotics' to the gaps and differences mentioned in the previous paragraph. A large associated challenge is how to develop a consensus among the distributed population and leaders regarding how to apply the principles mentioned here and partly expanded for evaluation. Focus groups, opinion polls, individuals providing survey information and feedback, as well as subject matter experts, and caucuses are some opportunities for providing that consensus, though not the only methods available. Another aspect of this opportunity leads to the next sub-section.

Evaluation Framework

All of the points mentioned in the above two paragraphs are not individual and isolated; they are complex and intricately interconnected. They form a complex network that can also be considered a 'complex adaptive system', which is the population of the world, and its environment. To begin to fully understand that system takes not only aspects of specialization, but also more importantly to this author's understanding, the need to understanding a great many things and pieces of information as well. In short, having a group of truly great generalists with reasonable depth and very broad education and training, along with ethics of individual as well as collective responsibility. Are there true generalists within the world, the author believes there may well be, though when viewing the education/knowledge framework of Hobbes (1651, 1985) of Figure 1, an opportunity arises for placing the current characteristics of the 'leadership and forces' as data points on scales associated with the categories provided. The author suggests that style of presentation offers a road map for action for training and education of the 'leadership and forces' for the future, along with the general population at large for the overall general betterment of the population. Included within Figure 1 is an area of 'ethics', which through Heinlein (1959, 1968), Dickson (1959, 1976 & 1970, 1972), along with Asimov (1940, 1970) and Brin (1999) offer aspects of collective and group ethics that can be considered for establishing the desired 'leadership and forces' standards for comparison with current perceived and actual conditions. Additionally, there are the individual and collective responsibilities that have also been developed (potentially interpreted by the Heinlein, Dickson, Asimov, and Brin framework) that can likewise be applied for courses of action, improvement, measurement of progress, and future achievement. All these factors represent that complex network of interconnected circumstances and influences that can start to be analyzed as influence nets, then acted upon by the effects based planning and operations efforts, or even traditional basic strategic planning and analysis. The challenge is framing them in understandable terms and parameters for the differing sections of the population and 'leaders and forces', and developing the capability to understand, at the same time, the small and large scale context of conditions and outcomes.

'Doing Windows' Writ Large

These areas of discussion are not particularly new, as this author has pointed out with the older references utilized in parallel with more contemporary sources. The challenge is in essence 'How to DO WINDOWS!', how to do the hard things by analyzing the contributing factors to

the wants, desires, and needs of the population at large, when there are large differences, large disagreements, and widely varying conditions. This has in part been a theme of other CCRP publications on humanitarian assistance and disaster response, as well as group interactions within various regions of the world. The author will suggest the elements of societal satisfaction cited in Appendix C (and included Annexes C 1 and C 2) of *Doing Windows* (Hayes and Sands, 1999) are an example in large grains of the gaps and opportunities presented within this section by the author and introduced within this paper. The author suggests a significant challenge of expanding the scope of our interpretation of governmental services delivery and moving to developing the 'leadership and forces' of the future. A group which can apply the aspects of well being for the common good, ethics, morals, responsibilities, and movement to collective good outcomes which could be called 'doing windows for the world'.

EXPECTED OUTCOME OF PAPER – SUMMARY

This paper proposed to flesh and deliver a discussion of leadership and action force characteristics, organizational characteristics, 'qualified' aspects of action points, and a collective outcome/future state target suggestions. Further, a generalized framework for evaluation guidelines was derived and discussed, as the factors represented by the two paired queries within the discussion section are intimately interconnected and networked.

Further this paper has attempted to present characterizations of the 'leadership and forces' for the future, along with their employment and opportunities for action upon 'action points', along with a framing of a generalized expectation of outcome and purpose. These points and characterizations set up gaps and opportunities for action to realize the characteristics of the 'leadership and forces', as well as a parallel framework for evaluation of progress and worthiness of the courses of action and efforts. Stated another way, the gaps and opportunities allow for the generation of influence nets of cause and effect paths to facilitate the realization of the outcomes and purpose. The challenge is to be able to work in the small details of implementation, along with the large details of strategic application and outcomes AT THE SAME time, thus enabling the 'longer view' and 'larger common good' contribution from collective understanding, and action opportunities in a completely coordinated manner. In other words, achieving an action path toward realizing the characteristics of a Donal Graehme, Cletus Grahame, and the 'leadership and forces' of the future, the population as a whole, for the world as a whole.

Opinions, conclusions, and recommendations, expressed or implied are those of the author. They do not reflect the views of the Command and Control Research Program, DoD, U.S. Navy, Naval Sea Systems Command, or Program Executive Office for Integrated Warfare Systems. The author likewise assumes responsibility for any errors in this work.

REFERENCES

(Ambrose, 1996) – Ambrose, Stephan. "Undaunted Courage – Meriwether Lewis, Thomas Jefferson, and the Opening of the American West", Simon & Schuster, New York:NY, 1996. (Trade book 2003.)

(Asimov, 1940, 1970) – Asimov, Isaac. "I, Robot", *Fawcett World Library*, New York:NY, 1970. (Original Copyrights of chapters/short stories cover 1940 – 1970, for nine (9) original short story sources.)

(Brin, 1999) – Brin, David. "Foundation's Triumph", *HarperCollinsPublishers*, New York:NY, 1999.

(Barnett, 2003) – Barnett, Thomas P. M. "The Pentagon's New Map - War and Peace in the Twenty-first Century", *Putnam*, 2004.

(Dickson, 1959, 1976) – Dickson, Gordon R. "Dorsai!" *Daws Books, Inc*: New York:NY, 1976. (Originally serialized in Astounding Science Fiction, Street & Smith Publications, Inc., 1959.)

(_____, 1970, 1972) - _____. "Tactics of Mistake". *Daws Books, Inc*: New York:NY, 1972. (Original Copyright: The CondeNast Publications, Inc. 1970. Copyright: G. Dickson, 1971.)

(DOD Budget, 2006) – DOD Budget Press Conference Slides of February 06, 2006. "FY2007 Department of Defense Budget", Slide #3.
Slides: http://www.defenselink.mil/news/Feb2006/d20060206slides.pdf at http://www.defenselink.mil/releases/2006/nr20060206-12435.html

(Fuentes, 2005) – Fuentes, Gidget, "SecDef TO Decide Fate Of Special Operations Unit". *MarineCorpsTimes.com*, January 26, 2005.

(Friedman, 1996) Friedman, Thomas L. "The Lexus and the Olive Tree – Understanding Globalization," *Farrar, Straus and Giroux*, New York: NY, 1999.

(Hayes & Sands, 1999) Hayes, Bradd C. and Jeffrey I. Sands. "Doing Windows: Non-Traditional Military Responses to Complex Emergencies," *Command and Control Research Program*, Washington:DC, 1999. http://www.dodccrp.org/publications/pdf/Hayes_Doing_Windows.pdf

(Heinlein, 1959, 1968) – Heinlein, Robert A. "Starship Troops," *G. P. Putnam's Sons, Berkley Medallion Books*, New York:NY, 1968, 13th Edition. (Copyright: Robert A. Heinlein, 1959.)

(Hobbes, 1651,1985) – Hobbes, Thomas. (1651). "Leviathan", Edited by C.B. MacPherson, *Penguin Books, Penguin Putnam, Inc.*, New York:NY 1985. p. 149.

(Huntington, 1996) – Huntington, Samuel P. "The Clash of Civilizations?" *Foreign Affairs*, Summer 1993. Reprinted in "Strategy and Force Planning," *Naval War College Press*, Newport: RI, 1996. p. 373-393.

(_____, 1997) – "The Clash of Civilizations and the Remaking of World Order," *Touchstone (Simon & Schuster*), New York: NY, 1997.

(JV 2010, 1996) – Joint Chiefs of Staff, "Joint Vision 2010". *JCS*, Washington DC, July 1, 1996. www.dtic.mil/jointvision/history/jv2010.pdf at www.dtic.mil/jointvision/history.htm

(JV 2020, 2000) – Joint Chiefs of Staff, "Joint Vision 2020". *JCS*, Washington DC, June 2000. www.dtic.mil/jointvision/jv2020a.pdf and www.dtic.mil/jointvision/jv2020b.pdf at www.dtic.mil/jointvision/jvpub2.htm

(NDS, 2005) – "National Defense Strategy of The United States of America". *DOD*, Washington:DC, March 2005. http://www.defenselink.mil/news/Apr2005/d20050408strategy.pdf at http://www.defenselink.mil/releases/2005/nr20050318-2245.html

(Norton, 2003) – Norton, Richard J. 'Feral Cities', *Naval War College Review*, Newport:RI, Autumn 2003, Volume LVI, Number 4, p.101.

(QDR, 2006) – "Quadrennial Defense Review Report". *DOD*, Washington:DC. February 6, 2006. http://www.defenselink.mil/qdr/report/Report20060203.pdf at www.defenselink.mil/qdr/

(Russell, 2003) – Dr. Richard Russell Plenary Presentation, 18 June 2003, *8th ICCRTS*, NDU, Washington, DC – "Project Alpha: A Modest Contribution to Defense Transformation", p. 5. (Entry hyperlink)

(Smith, 2005) – Smith, W. Thomas, Jr., "Unconventional Marines". *National Review Online*, October 26, 2005. Accessed from http://ebird.afis.mil/ebfiles/e20051027398478.html on November 01, 2005.

(Wood, 2006) – Wood, Sara, Sgt. USA. "Soldiers Must Be Adaptive for Future, Army Chief Says". *Armed Forces Press Service*. Washington:DC. February 21, 2006. Accessed from http://www.defenselink.mil/news/Feb2006/20060221_4263.html on February 22, 2006.

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