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**PLANNING AND ASSESSING STABILITY
OPERATIONS: A PROPOSED VALUE
FOCUS THINKING APPROACH**

THESIS

Gerald D. Fensterer, Captain, USAF

AFIT/GOR/ENS/07-06

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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AFIT/GOR/ENS/07-06

PLANNING AND ASSESSING STABILITY OPERATIONS:
A PROPOSED VALUE FOCUS THINKING APPROACH

THESIS

Presented to the Faculty

Department of Operational Sciences

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In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Operations Research

Gerald D. Fensterer, BS

Captain, USAF


March 2007

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PLANNING AND ASSESSING STABILITY OPERATIONS:
A PROPOSED VALUE FOCUS THINKING APPROACH


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Abstract

Stability operations are vital to establish peace in the aftermath of conflict. Larger nations in the eastern hemisphere have been in a constant state of change since the end of the Cold War. Smaller countries struggling for independence from the former USSR as well as several Middle Eastern countries and Africa are suffering from conflict both within and without. The United States is often called on for military support during conflict. The new American military paradigms include establishing peace through stability operations after a military conflict. Due to this new role, military decision makers face many difficulties in conducting successful stability operations. Compounding this problem is the limited number of resources pertaining to stability operations: experts, doctrine, knowledge, and technology. Two overarching challenges of stability operations facing decision makers are planning and prioritizing of stability operations and determining progress.

This thesis applies a structured analytical approach to stability operations by using the decision analysis technique of value focus thinking. It develops a tool in the form of a value hierarchy that can be used to assist in the planning and prioritizing of stability operations. The purpose of the hierarchy is two-fold. The main purpose is to provide the decision maker with a method to measure the progress of the stability operations in moving a failed state to a stable one. The secondary purpose is to help the decision maker determine which actions will have the greatest impact on improving the stability of the nation-state.

AFIT/GOR/ENS/07-06

To Wife and Children

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Gerald D. "Fence" Fensterer

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List of Terms and Acronyms

AFT	Alternative Focused Thinking
CA	Civil Affairs
CE	Civil Engineering
CIVPOL	United Nation's international civilian police organization
CSIS	Center for Security and International Studies
CT	Conflict Transformation
DA	Decision Analysis
DoD	Department of Defense
DoS	Department of State
DM	Decision Maker
DSB	Defense Science Board
EBA	Effects-Based Assessment
EBE	Effects-Based Execution
EBO	Effects-Based Operations
EBP	Effects-Based Planning
EN	Engineers
J-3	Army Plans, Operations, and Training
J-5	Army Strategic Plans and Policies
JWFC	United States Joint Forces Command Joint Warfighting Center
KFOR	Kosovo Force: NATO's international security presence
KLA	Kosovo Liberation Army
LOO	Line of Operation

MP	Military Police
NATO	North Atlantic Treaty Organization
NGO	Non-Governmental Organization
OEF	Operation Enduring Freedom
OHR	Office of the High Representatives
PA	Public Affairs
RAND	Nonprofit institution that helps improve policy and decision making through research and analysis
SOJOC	Stability Operations Joint Operating Concept
SOPS	Stability Operations
SoSA	System-of Systems Analysis
SP	Security Police
TMK	Kosovo Protection Corps—authorized to provide disaster response, conduct search and rescue, provide humanitarian assistance, assist in demining, and contribute to rebuilding infrastructure and communities, but not allowed any law and order capabilities.
UN	United Nations
UNDP	United Nations Development Program
UNMIK	United Nations Interim Administration Mission in Kosovo
VFT	Value Focused Thinking
VH	Value Hierarchy
U.S.	United States
USAID	United States Agency for International Development

MODELING STABILITY OPERATIONS: A PROPOSED VALUE FOCUS THINKING APPROACH

1. Introduction

1.1 Background

"America is now threatened less by conquering states than we are by failing ones." (U.S. National Security Council 2002)

In 2002, President George W. Bush acknowledged that failing or failed states were now a preeminent issue facing the security of the United States of America. These failing states did not spontaneously come into existence, but had been recognized as a new threat both prior to, during, and after conflict whether or not the U.S. was involved. It started to become clear that Stability Operations (SOPS) was a way to neutralize the potency of aggression and violence from these failed states, thereby reducing terrorism and increasing globalism. However, the U.S. government also became aware that its ability to conduct SOPS was limited.

The U.S. government, specifically the Department of Defense (DoD) and the Department of State (DoS) have been intently trying to establish a form of doctrine and strategy for SOPS, especially since combat operations ended in Iraq on 1 May 2003. Currently, ongoing studies are in place to give support to SOPS. However, there seem to be some difficulties with effectively measuring stability, planning and prioritizing stability operations, and assessing progress.

A DoD study in 2004 found that U.S. SOPS in one form or another have existed since 1846, when Major General Winfield Scott and the U.S. Army occupied and

administered Mexico City (Defense Science Board 2005b:9). Since that time, the U.S. has been involved in many minor and major conflicts requiring some form of SOPS. In general, combat operations are followed by SOPS. However, in today's ever changing environment, SOPS can be implemented prior to hostilities as well. An interesting trend during the Clinton administration, following the end of the Cold War, is that the U.S. has been involved in SOPS every two years on average (Dobbins et al. 2003). Looking at the full spectrum of SOPS the U.S. provides, there are indications that the number of SOPS missions is increasing. Additionally, based on the RAND analysis of SOPS, it appears that most SOPS attempted since the 1990's have either failed or have yet to prove they have worked (Dobbins et al. 2003). The two case studies of successful SOPS have been post-WWII Germany and Japan. This suggests the immediate need to be able to implement successful SOPS in the future.

The government fully understands this need, and in efforts to understand and create a doctrine for SOPS, has authorized a number of studies of the current state of SOPS. The Defense Science Board (DSB) conducted research in 2004 to analyze SOPS successes and shortfalls. The DSB's study called for actions by both the DoD and DoS in order to implement successful SOPS.

The results of the DSB study and other research led to the DoD's publication of Directive 3000.05 in 2005. This directive provides guidance to DoD agencies in the implementation of SOPS. A very important part of this directive is the definition of SOPS. According to the Department of Defense (DoD), SOPS are defined as "military and civilian activities conducted across the spectrum from peace to conflict to establish or maintain order in States and regions" (U.S. Department of Defense 2005:2). This directly

states that SOPS are not, nor should they be, strictly a DoD matter. However, it is interesting to note that the DoD has been better at implementing the new SOPS doctrine than the DoS (Defense Science Board 2004:40). The directive continues to provide guidance and policy for the responsibilities of each department.

The DoS responded to the need for high-level SOPS guidance by creating the Office of the Coordinator for Reconstruction and Stabilization (OCRS) in the State Department in 2004. Its mission is defined as:

The office will lead, coordinate, and institutionalize U.S. Government civilian capacity to prevent or prepare for post-conflict situations, and help stabilize and reconstruct societies in transition from conflict or civil strife so they can reach a sustainable path toward peace, democracy and a market economy. (Department of State 2005b)

Currently, it is a relatively small department, staffed by 55 officials on loan from the DoD, Central Intelligence Agency, and others. Unfortunately, its current capabilities are limited due to its minimal manning and under-funding (King & Jaffe 2003). However, the office is expected to grow and help sustain SOPS with an increased 2006 budget of \$100M (Department of State 2005b). According to the *Budget of the United States Government, Fiscal Year 2006*, the \$100M budgeting has been established (Department of State 2006). This shortfall results in the military, most often the U.S. Army and U.S. Marine Corps, facing SOPS with a minimal amount of the DoS interagency support and cooperation called for in Directive 3000.05 and its supporting studies.

Another complication is that traditionally, no government agency has made stability and reconstruction missions core competencies within their ranks (Defense Science Board 2004:38). Therefore, the military, while exceptionally trained and equipped to fight the conflict during wartime, is finding that SOPS are harder to

accomplish and is recognizing many difficult to overcome obstacles. The military has a number of support units such as civil/public affairs (CA/PA), military/security police (MP/SP), engineers (EN/CE), medical services which can help in the transitional time at the beginning of SOPS, but is ill-equipped to handle the enormous task of SOPS by themselves. In addition, the number of these units are small relative to the tasks they face. Many of the problems for the military and other agencies trying to accomplish SOPS are captured in the following questions. What operations do we need to accomplish with SOPS? How do we prioritize the operations during SOPS? How can we evaluate how well SOPS are actually improving stability?

There are many SOPS experts from RAND, CSIS, DoD, DoS, and other agencies who have advanced the field of study by discovering the objectives of SOPS and offering solutions on the “What to do?” portion of the problem. James Dobbins et al, in the book *America’s Role in Nation-Building: From Germany to Iraq*, established a lens by which to view SOPS by examining our past in nation building (Dobbins et al. 2003). Robert Orr, in his book *Winning the Peace: An American Strategy for Post-Conflict Reconstruction*, establishes the guidelines for SOPS, indicating that the four areas in stabilizing a nation are: security, governance and participation, social and economic well being, and justice and reconciliation (CSIS 2004). Jock Covey et al supports Orr’s findings in the book, *The Quest for Viable Peace*, with first-hand experience in the Kosovo conflict (Covey et al. 2005). The DSB published the study “Transition to and from Hostilities” which depicted five objectives of SOPS as: security, governance, macroeconomic regulatory functions, political reform, and economical development (Defense Science Board 2004; Defense Science Board 2005). These objectives are

similar to Orr's objectives in general definition. It becomes quickly apparent that the fundamental objectives of SOPS are security, governance, economy, social well-being, and rule of law.

Identifying objectives that establish peace and stability in a country are an excellent advancement in the application of SOPS. However, an analysis framework for effectively prioritizing SOPS, accounting for trade-offs between the various objectives, is essential due to the time and financial constraints of these operations. Equally important is a tool to provide decision makers (DMs) with an account of progress. Such tools will help the DoD and other agencies reach their SOPS objectives and provide for successful SOPS.

This thesis evaluates the use of the Decision Analysis (DA) approach of Value Focused Thinking (VFT) towards SOPS. VFT provides insight for strategic decision-making by helping DMs define trade-offs between competing and conflicting objectives. VFT is also an effective methodology to address decisions with uncertainty. These qualities make VFT a very appropriate methodology for addressing the many objectives and uncertain consequences of SOPS.

VFT handles qualitative and quantitative analysis equally well. The decision making process is partially subjective, objective, quantitative and qualitative. According to Clemen, "Personal judgments about uncertainty and values are important inputs for decision analysis" (1996:5). VFT offers a methodology to combine these attributes into defensible analysis for a decision.

A value hierarchy (VH) is a structure used to view and analyze the objectives developed using VFT. It provides the DM with a wealth of information helpful in

making a decision. According to Kirkwood, the VH provides a “guide to information collection, help to identify alternatives, facilitate communications, and evaluate alternatives” (1997:22-23). VHs help to ensure the information gathered is pertinent to the values in the decision. VHs help develop of alternatives focused on the values of the decision. VHs foster communication by providing a simple mechanism for all stakeholders to see the common values in a decision. Finally, a VH provides a structured evaluation of alternatives, providing an ordinal ranking of alternatives from best to worst.

Calls for improving our capability to plan for and respond to post-conflict and failed-state situations by the new National Security Strategy (U.S. National Security Council 2006) reflect that the need for effective SOPS tools. Key tools include methods to prioritize SOPS courses of action and to evaluate the movement of a failing or failed state towards stability. This thesis will address this need through the use Value Focused Thinking (VFT).

1.2 Problem Statement

The DoD and DoS realize the importance of SOPS in modern day conflict. Multiple high-level documents outline desired capabilities for both DoD and DoS agencies to implement SOPS for failed or failing nations. Additionally, there are experts in the field who have developed generalized objectives that need to be accomplished during SOPS. However, currently there are limited open source tools available to provide insight on the prioritization or evaluation of SOPS to decision makers. This thesis uses the Value Focus Thinking (VFT) methodology to create a strategic level value hierarchy that can be used to prioritize SOPS courses of action and to provide an

assessment of the progress of SOPS in a failed or failing state following DoD Directive 3000.05

1.3 Research Scope

This thesis focuses on the assessment of stability operations at the strategic level. Planning and assessment of individual (tactical) operations is not considered. The objective of this thesis is to establish a VFT model that supports stability operations by providing decision makers with a tool to prioritize and assess stability operations in failing or failed states. The model will be flexible to changes in doctrine, measures, and weighting criteria; analytically rigorous to provide accurate information; simple for decision makers to understand and use; and efficient for quick analysis and decision making.

1.4 Assumptions

Many of the conditions for SOPS defined by Directive 3000.05 and other national guidance are dependent upon the political, interagency, and financial support of SOPS. There are currently struggles within the DoD and DoS in obtaining these important pillars of support as shown by almost all literature on the topic. However, this thesis assumes this support is in place.

This thesis assumes that the decisions are being made from a risk neutral attitude. Therefore, a multi-attribute additive value function may be used to determine the combined value of each alternative. Finally, this thesis also assumes that all data necessary to measure the objectives are available.

1.5 Thesis Organization

This thesis consists of five chapters. Chapter 2 presents a literature review of the development of stability operations and of value focus thinking. Chapter 3 employs the value focused thinking methodology to construct a value hierarchy of stability operations. Chapter 4 uses the value hierarchy to notionally measure the stability of a fictional country of Badistan in 2003 and again in 2005. It then illustrates how the model could be used to rank SOPS courses of action in improving Badistan of 2005. Finally, Chapter 5 presents the contributions and limitations of the methodology and offers areas for further research.

2. Literature Review

2.1 Introduction

This chapter outlines the existing research directly applicable to a stability operations (SOPS) value focus thinking (VFT) model. A brief history of SOPS in which the U.S. has been both successful and unsuccessful is first presented. The chapter then defines U.S. SOPS according to current Directive 3000.05 and provides for a more in-depth context with additional information from the Stability Operations Joint Operating Concept (SOJOC). Next VFT is described focusing on how the methodology helps decision makers to evaluate strategic decisions. The chapter concludes with a discussion of the application of VFT for use in evaluating SOPS.

2.2 Brief History of U.S. Involvement in Stability Operations

In order to develop a better understanding of SOPS, it is necessary to examine our nation's past experiences with SOPS. The following are accounts of US involvement in SOPS. Two successful SOPS were conducted during WWII in Germany and Japan. However, since then, there have been some failures, some partial successes, and several SOPS for which the outcome is still pending. The short summations will show the successes and shortfalls of many SOPS and provide insight as to why a method is needed to help DMs plan and evaluate SOPS. The summations are composed from the works of RAND (Dobbins et al. 2003) and of the DSB (Defense Science Board 2005a). Lessons learned from these SOPS are outlined in Appendix A.

WWI ended for Germany 11 November 1918. Following the combat operations little was done for SOPS due to expectations that the war was going to continue into

1919. Woodrow Wilson's Fourteen Points was an inadequate document for framing the peace due to its lack of knowledge of European realities (DSB 2005a:34). Additionally, it called for peace without retribution, which was unacceptable to many European countries still stinging from the damage of the war. The result was a treaty that called for un-repayable reparations, severed Germany from its traditional territories (Poland), assigned blame of the war solely to the German state, forbade Germans and Austrians to unify, and put Sudetens in a new Czech state against their will. Obviously, this failed to stabilize Germany, and after 25 years of misgivings and rhetoric of how Germany had not been defeated, Germany was again involved in a world war.

WWII erupted 1 September 1939 as Germany again took the world into another war. It ended for Germany in May 1945. Military planners had learned their mistakes from WWI lack of SOPS, and had been planning SOPS for post-war Germany since 1942. The SOPS were very successful at stabilizing Germany. They involved an unconditional surrender on German soil, the declaration of martial law, German-speaking economic and technical advisors, abolishing and reconstructing government institutions, no break between combat and post-combat operations, a hunt for war criminals and the establishment of justice institutions, the integration of Germany's industry into the European market, and massive American aid in the form of personnel, materiel, and money (DSB 2005a, CSIS 2004, Dobbins et al. 2003). The result was successful SOPS resulting in a stable Germany.

Japan is another successful SOPS example. After dropping two nuclear weapons on major Japanese cities, staging forces to storm the Japanese homeland, and the Soviet attack on the Japanese in August of 1945, Japan finally surrendered on 2 September

1945. Two primary factors in the success of SOPS in Japan were the use of Japanese institutions and the unilateral process of nation-building (Dobbins et al. 2003:52). The U.S. occupied Japan and adapted many of Japan's institutions. The occupiers were not fluent in either language or technical capabilities, so most of Japan's political and economical institutions were overseen by the U.S. while the work was done by the Japanese.

The U.S. introduced a new constitution, reorganized the police, and purged unnecessary leadership. The U.S. also managed the occupation through a fully working government and judicial system. Additionally, the occupation authority was comprised primarily of one nation, allowing quick reconstruction due to the lack of consulting and oversight from other nations. Unfortunately, failing to involve Japan's neighbors in the SOPS and the decision to absolve the emperor who began the war has left Japan less reconciled with their neighboring nations (Dobbins et al. 2003:53). Overall, Japan's stabilization proved to be a success for SOPS.

Panama during the 1980s had destabilized into a country of corruption and criminalization. Noriega's regime ruled by fear and oppression while nurturing criminal activities such as arms smuggling, money laundering, and drug smuggling. Additionally, there was fear that Noriega was allying with Fidel Castro (Defense Science Board 2005a:8). Operation JUST CAUSE overthrew Noriega's regime in one night leaving Panama a highly unstable country.

BLIND LOGIC, the SOPS following JUST CAUSE, suffered from many unfortunate setbacks (Defense Science Board 2005a:10-19). First, there was no communication between military leaders and the J-5 team organizing the SOPS. Second,

there was lack of planning by the J-5 in preparation for SOPS. Additionally, there was the erroneous assumption that another agency would come in to control the post-conflict period. Finally, planners did not possess the “basic knowledge of what Panama had become and how Panamanians were likely to react to the removal of controls on their actions” (Defense Science Board 2005a:16). This resulted in the loss of order in Panama, severe economic damage, and a stability and crime problem that still exist today.

In 1991, Somalia was in a state of chaos after the overthrow of Major General Muhammad Siad Barre’s regime. The UN intervened in April 1992 to provide humanitarian services. Eventually the U.S. was brought in to perform SOPS. However, the combined UN/U.S. SOPS proved unsuccessful due to several factors. U.S. forces initially began humanitarian missions, but changed to SOPS as the Clinton administration started withdrawing troops from the area. Likewise, during this time, there were no attempts to rebuild civil or political institutions. “No international police, judges, penal authorities, administrators, or technical experts were deployed to fill the governance gap or begin reconstruction” (Dobbins et al. 2003:69). These factors led to the warlords no longer fearing U.S. power, and regaining the country. It became apparent that leadership was not communicating responsibilities or objectives for SOPS between the U.S. and the UN. In addition, it was determined that security was a prerequisite to economic growth (Dobbins et al. 2003:70). Eventually, the effort was abandoned in 1995, and Somalia was left in a state that was no better than they were prior to the arrival of the UN force.

Haiti’s conflict began with the coup that ousted President Jean-Bertrand Aristide in June 1991. Through U.S. and UN intervention, President Aristide was re-instated 15 October 1994. Although on the surface it would seem to be a success, the SOPS had

failed. Failure was due to multiple problems with early U.S./UN withdrawal of occupying forces, a broken judicial system and infrastructure, a slow-moving government, and a lack of economic privatization. Generally, nation-building takes no less than five years (Dobbins et al. 2003:84). The early withdrawal of troops and personnel was severely detrimental to building viable political and civil institutions. A massive number of armed U.N. police with policing authority helped detain a large criminal population. However, due to the lack of judicial infrastructure, including courts and prisons, the Haitian National Police was left with a situation that devolved into corruption and judicial ineffectiveness. The World Bank funneled money into Haiti's government, infrastructure, and the poverty-stricken populace. This charity was mishandled by a slow-moving government, resulting in money being channeled through NGOs instead. Due to the lawlessness, greed, and an ineffective government, the money did not provide the ability to change the economy. This has resulted in Haiti having a weak government and economy, lawlessness, and continued poverty.

In 1992, Bosnia sought independence through a referendum accepted by the European Community. This independence was followed closely by a civil war of ethnic violence that lasted through much of 1995. On 21 November 1995, peace was achieved through the Dayton Accord, which was signed in Paris three weeks later. SOPS followed and have been viewed as partially successful. There were many mixed developments that both enhanced and degraded SOPS in Bosnia. First, NATO was highly successful in obtaining broad participation of nations, unity of command, and U.S. leadership in the military aspects of the Bosnian SOPS. However, there was turmoil on the civilian operations due to a lack of contact and communication between NATO and Office of

High Representatives (OHR), whose purpose was to oversee civilian implementation of the Dayton Accord. Likewise, the Clinton administration demanded early and frequent elections at each level of governance (Dobbins et al. 2003:108). This created more problems because the nationalist parties that were voted into office were the ones who inspired the civil war and resisted democratization. Furthermore, crime flourished through smuggling due to taxation problems. Bosnia's neighboring states, Croatia and Serbia, pressured a return to a unified Slavic state until their respective leaders were deposed in favor of democratic ones. However, Bosnia's economic growth has surged after the Dayton Accord, due to peace and foreign assistance, and is now assumed to be self-sustaining.

On 24 March 1998, NATO responded to Yugoslavia's ongoing violence and conflict with Kosovo with a bombing campaign. On 3 June 1999, Yugoslav President Slobodan Milosevic accepted NATO's conditions. Following his surrender, a successful series of SOPS were conducted, along with elections two years later, establishing a stable Kosovo. The success of Kosovo was dependent upon many elements. The first was the high degree of collaboration and burden sharing among all the participant nations. However, this collaboration resulted in slow starts for civil implementations. An example of this was the creation of the UN international civil police organization (CIVPOL) several months after the end of conflict. Until CIVPOL was created NATO's international security force (KFOR) maintained law and order. Providing security is crucial to the success of SOPS. However, Kosovo's final status as a nation was unresolved, hampering ethnic reconciliation and democratic transformation (Dobbins et al. 2003:128). Another successful aspect was that SOPS helped Kosovo quickly establish

an economic infrastructure: bank, treasury, currency, and finance ministry. Likewise expatriates introduced “best practices” and methodology to local workers to optimize financial systems. Finally, the extremely large foreign assistance to both public and private institutions sped economic recovery as well. SOPS have successfully stabilized Kosovo.

Following the attacks on 11 September 2001, the U.S. engaged in Operation Enduring Freedom (OEF) to eliminate al Qaeda in Afghanistan and to stabilize the country. OEF began 7 October 2001 and is ongoing. For the moment OEF SOPS have mixed reviews. U.S. forces are having difficulty applying lessons learned from prior SOPS experiences to Afghanistan. There appears to be a lack of unity of command in both military and civilian operations, a lack of security, and a lack of infrastructure (Dobbins et al. 2003:146-147). However, the U.S. has been able to get successful backing of the legitimacy of the new democratic Afghanistan government from world nations. Likewise, international assistance has encouraged urban economic growth; although such growth is limited due to poor security and infrastructure. Time will tell if SOPS in Afghanistan will be considered another success story.

The preceding examples show previous SOPS have been both effectual and ineffectual in establishing a stable state. The examples highlight a myriad of necessary objectives to accomplish in order to achieve a stable state. Likewise, there have been several learned objectives that were lacking in past SOPS hindering the achievement of stability in a nation. These objectives are in agreement with the strategic guidance for SOPS discussed in the next section.

2.3 Stability Operations Defined

Stability operations have existed in some form over the course of history. Whenever conflict exists between tribes, states, nations, or empires, where conquest is attempted, the victor faces the issue of SOPS. Generally, in modern times these operations have been such that they attempt to establish order in the conquered land following the conflict. However, the definition of SOPS has been somewhat elusive. SOPS are defined by the objectives of the operations and because objectives are situational, defining SOPS in general is difficult. The following are expert opinions on what SOPS entail, including what doctrine defines as SOPS. In Chapter 3, this thesis uses VFT to help further define SOPS.

In *Beyond Declaring Victory and Coming Home: The Challenges of Peace and Stability Operations*, Manwaring and Joes discuss objectives of SOPS through a collection of authors that researched different facets of establishing peace in a failed state. Many of the objectives of SOPS are dependent upon first establishing a legitimate state. Though one could postulate a “chicken or egg” argument as to whether SOPS establishes legitimacy in a state, or legitimacy allows SOPS to create peace, it offers many insights on SOPS objectives.

The first objective is the establishment of law and order. This is essential to the recovery of a failed state, since more often than not, a failed state has non-existent or broken rules with which to govern society. This creates an atmosphere where criminals and insurgents are in control of the land. Through careful examination, it is proposed that restoring public order through detaining and trying enemies of the state, regulation of civil life, and privileged status to intervention force combatants can help obtain this

objective. Likewise, according to Manwaring and Joes, restoration of the local government by establishing indigenous leaders through elections, and international authorization plays an important role in restoring law and order.

The second objective is isolation of belligerents. By isolating belligerents, the nation becomes a safer place where the populace lives without fear of danger, therefore supporting the state and increasing stability. Methods to achieve this isolation are through physical means: separating insurgents from civilian population, clearing and holding onto territory, creating fortified lines and impassable barriers, and civilian resettlement. However, it is noted that civilian resettlement more often than not fails to achieve stability and is therefore not recommended (Manwaring and Joes 2000:59). Additionally, moral methods are offered as a solution to isolation. These methods include maintaining a legitimate government, limiting military tactics to do the least damage to society, and correct conduct toward civilians and prisoners. The last implementation of rectitude is highly influential of the public and minor infractions can lead to long term damage to stability. Some present situations where this is noted are the atrocities at Abu Ghraib (Washington Post 2006) and the accused murder and rape of Iraqi civilians by U.S. troops (CNN 2006).

A third objective for SOPS is sustaining life, relieving suffering, and regenerating economy. The reasons for this objective are obvious. By providing immediate humanitarian relief to the people with food, water, and medical services; providing for the continued welfare through human rights accountability; and economic intervention, the people are placed in a state where they can physically and economically recover, thereby establishing a peaceful and prosperous population.

Dobbins et al. published a RAND study that investigated various SOPS over the past 50 years, ultimately determining the transformation process that enabled SOPS to be accomplished. This process could be understood as the pre-conditions of a state that helped SOPS be successful. Throughout the literature, objectives for SOPS were defined as economic development, political transformation, western culture, and national homogeneity. Secondary objectives included level of effort of international community, lesser than swift and bloodless military victory, burden sharing and unity of command. Two additional objectives of SOPS mentioned are increasing the number of troops and duration of deployment. Dobbins states that “there is no quick route to nation-building. Five years seems the minimum required to enforce an enduring transition to democracy” (Dobbins et al. 2003:84). Although five years is a lower bound to stabilization, it is not an objective of SOPS even though time in country is certainly something the stabilizing force would want to minimize. Overarching or fundamental objectives in the RAND study were security, humanitarian efforts, civil administration, and reconstruction.

Robert Orr’s examination of stability illustrates four standard pillars of SOPS: security; governance; social and economic well-being; and justice and reconciliation. He proposes five necessities in order to establish the first pillar of security: unity of effort; integration of security forces; disarmament, demobilization, and reintegration (DDR) of combatants; regional security and reconstruction of security installations; and information and intelligence. There are three activities identified to create the second pillar of self-governance: process for constituting a legitimate government; enhancing government capacities; and ensuring participation in government and reconstruction processes. The third pillar, socio-economic well-being, is defined by six minimum stability conditions:

establishing a legal regulatory framework that supports basic macroeconomic needs; effectively managing the natural resource components of many conflicts; engaging the private sector; jumpstarting international trade; establishing basic education services; and combating HIV/AIDS. Finally, he identifies six key elements of justice and reconciliation: effective, responsive, and respectful law enforcement instruments; impartial, open, and accountable judicial system; fair constitution and body of law; human rights mechanisms; humane corrections system; and reconciliation mechanisms for dealing with past abuses and grievances. These four pillars are used by the DoS to coordinate post conflict strategy development (JFWC Doctrine Pam 7 2004, Department of State 2005a).

Jock Covey, former principal deputy special representative of the secretary-general at the United Nations Interim Administration Mission in Kosovo (UNMIK), develops a definition of SOPS from his first-hand experiences in nation-building in Kosovo. He calls his version of SOPS “Conflict Transformation” (CT). It is interesting to note that the CT he generalized from the Kosovo conflict essentially matches the SOJOC definition of SOPS. Through his experiences, he notes that peace and stability are brought about to a failed state through transformations of politics, security, rule of law, and economy (Covey et al. 2005). Although all of the following objectives were developed for SOPS in Kosovo, they can be broadened to cover SOPS in general.

Covey referenced UN Resolution 1244, which articulated the United Nations Interim Administration Mission in Kosovo (UNMIK) sub-objectives to address the objective of politics. The two formal sub-objectives were to establish an interim civil administration and to make progress toward substantial autonomy and democratic self-

government. There were several other elements on how to achieve these two objectives including mediating conflict incrementally, avoiding early crippling failures, and making a sustainable mandate. It makes clear that guidance should be provided from some higher level source, in order to legitimize the objectives.

The second of Covey's SOPS objectives is defeating militant extremists. Militant extremists consist of those who conduct local inter-ethnic violence, politically inspired violence, or criminal violence and organized crime. The security objectives for defeating militant extremists were to deter renewed hostilities, maintain and enforce a ceasefire, ensure Serb military, police, and paramilitary withdrawal and prevent the return into Kosovo; to demilitarize armed groups; to establish a secure environment for refugees and displaced persons (IDPs), the civil presence, the transitional administration, and humanitarian efforts; to ensure public safety and order; to supervise demining; to support and coordinate with civil presence; to conduct border monitoring; and to ensure protection and freedom of movement for allies, civil presence, and other international organizations. He ties the implementation of security with the development of law and order and military lines of operation (LOO) which are generally classified.

Covey's third SOPS objective is the institution of law and order. In Kosovo, there were two sets of objectives for both KFOR and UNMIK. KFOR's objectives were to ensure public safety and order and to support and coordinate with the international civil work. UNMIK's objectives were to maintain civil law and order, establish local police forces, provide interim law enforcement, develop a "credible, professional, and impartial police service", protect and promote human rights, create judiciary and penal systems,

perform basic civil administrative duties, and administer courts, prosecution services, and prisons (Covey et al. 2005).

The final of Covey's four SOPS objectives is the economy. The first sub-objective is the establishment of macroeconomic fundamentals (e.g. currency, banking, a regulatory system, etc.). The second is the establishment of a formal economy by undercutting the economic foundations of obstructionist power and the reconstruction of infrastructure to aid the humanitarian relief, basic services, and utilities.

In 2004, the Defense Science Board (DSB) published a study investigating the concept of SOPS. The culmination of their research resulted in the publishing of DoD Directive Number 3000.05. This directive states that SOPS are "Military and civilian activities conducted across the spectrum from peace to conflict to establish or maintain order in States and regions" (U.S. Department of Defense 2005:2). This is the national level definition of SOPS. It is clear that the definition leaves open to interpretation as to what types of activities are considered SOPS. However, from this definition it is apparent that the over all objective of SOPS is to establish or maintain order in a state.

The Stability Operations Joint Operating Concept (SOJOC) published shortly before the DSB's study defines SOPS similarly to Directive 3000.05, but adds that SOPS are:

Multiagency operations that involve all instruments of national and multinational action, including the international humanitarian and reconstruction community to support major conventional combat operations if necessary; establish security; facilitate reconciliation among local or regional adversaries; establish the political, social, and economic architecture; and facilitate the transition to legitimate local governance. (U.S. Department of Defense 2004:2-3)

This definition is clearly in line with Directive 3000.05. It further defines what is meant by “establish or maintain order in States”. The SOJOC SOPS definition continues as operations that “establish a safe and secure environment; provide essential social services, emergency infrastructure reconstruction and humanitarian relief in order to facilitate the transition to legitimate, local civil governance” (Department of Defense 2004:3). It is relatively easy to extract the objectives of SOPS from this definition. The objectives can be summarized by security, rule of law, social services, and economic activity.

This research will use a combined definition of SOPS derived from all of the sources mentioned above to construct a value hierarchy. The derivation and construct is the focus of Chapter 3.

2.4 Value Focused Thinking

Value Focused Thinking (VFT) is a Decision Analysis (DA) approach developed by Ralph L. Keeney (Keeney 1992). It is used in the decision process to help the decision maker(s) (DMs) determine their values concerning the decision, develop objectives based on these values, structure them and determine the trade-offs between competing or conflicting objectives, identify alternatives to address the objectives, evaluate and rank the alternatives, and finally choose an alternative for implementation. A flowchart of the decision process is shown in Figure 1.

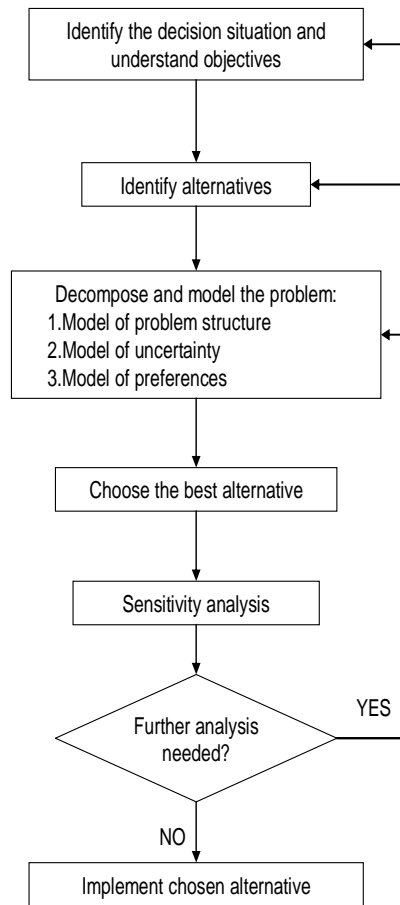


Figure 1: Decision Analysis Process Flowchart (Clemen 1996:6)

2.4.1 Identifying Values and Objectives

VFT, as the name implies, means critically thinking about one’s values when faced with a decision. VFT is “a way to channel a critical resource—hard thinking—in order to make better decisions” (Keeney 1996:537-538). Values, according to Keeney are “principles for evaluating the desirability of any possible alternatives or consequences” (Keeney 1994:33). In other words, they are the things DMs believe are important in a decision. Since ideally “values are fundamental to all that we do” (Keeney 1996:537), they should drive the decision making. Instead, many DMs look immediately

to alternatives that have worked in the past to solve a similar problem or at the options that are currently available. In this case, the DM is focusing on alternatives instead of values. Keeney calls this type of thinking alternative focused thinking (AFT) (Keeney 1994:33). While this is a common method of problem solving, it has two major obstacles that VFT can overcome.

First, AFT is constrained to the realm of knowledge of the DM limiting the number of alternatives to solve a problem. Usually, when using AFT, alternatives are developed to solve the decision problem prior to understanding the values. It is only after determining the alternatives that the DM looks to see if the alternatives address the objectives (explicit realizations of values) of the problem. In other words, alternatives are presented, and out of those alternatives, the DM checks to see if any possess the capability to sufficiently solve the problem. The alternatives are limited to whatever the DM can identify from previous experience or firsthand knowledge. Hence the problem can be solved only if one of the alternatives actually addresses the problem. Likewise, if the problem is nebulous or ill-defined, simply producing alternatives can be challenging.

VFT, on the other hand, focuses on first identifying and structuring values pertinent to the decision at hand. VFT allows the DM to critically understand the problem, which is the most important step in problem solving. Whether the decision problem is well-defined or not, VFT offers methods of identifying values and creating objectives.

One method to create objectives is means-ends logic. In cases where objectives were obtainable by the DM and encompassed the values, this method is appropriate. Using means-ends logic, objectives defining values can be grouped into a smaller

common set of objectives. These function as strategic or fundamental objectives. Examples of this were shown by Keeney for CMI (Keeney 1994) and British Columbia Hydro (Keeney 1996) and are illustrated in Appendix B.

A second method in transitioning the values to objectives is affinity diagramming. This method is more useful when objectives are undefined or non-existent. It focuses on values, and categorizes them into meaningful groups which have a broader interpretation. This is repeated until high-level aggregated values can be reached. These values are then the fundamental objectives of the decision problem. A successful application of affinity diagramming is Foundations 2025 (Parnell et al. 1998). Affinity diagramming was used to aggregate 109 values into three fundamental objectives of awareness, reach, and power. Appendix C shows the affinity diagramming for Foundations 2025.

By using VFT to identify values, many more objectives and alternatives can be identified. An example of this is shown by Orfelio G. León. In this study two groups were asked to generate a list of objectives to the problem: Which advanced courses should I take? The result of the study was that “the structure generated by VFT was equal or superior to that generated by AFT in all qualities judged” (Leon 1999:213). Specifically it was more complete, more operational, equally concise, and more understandable. Additionally, the resulting alternatives were “more innovative, had a larger range, and dealt with more foreseeable consequences” (Leon 1999:225). Using VFT results in more alternatives generated, and all of them specifically address the objectives and values of the problem.

The second problem with AFT is that it is typically reactive, whereas VFT can be proactive. AFT is often used because a decision problem unexpectedly arises or is

delegated. Immediately, the DM tries to solve it with alternatives. However, by using VFT proactively, the DM understands the values of the situation and can use the objectives structure to generate multiple alternatives capable of solving the problem. Often this development gives rise to more questions about the broader context of the decision problem, which Keeney refers to “decision opportunities” (1992:8). These decision opportunities when taken in context with the original decision problem can give the DM the additional ability to prescribe an alternative to address the decision opportunities when they arrive. In this way, VFT is a prescriptive method of decision making as well. Some of the many uses of VFT are summarized in Figure 2.

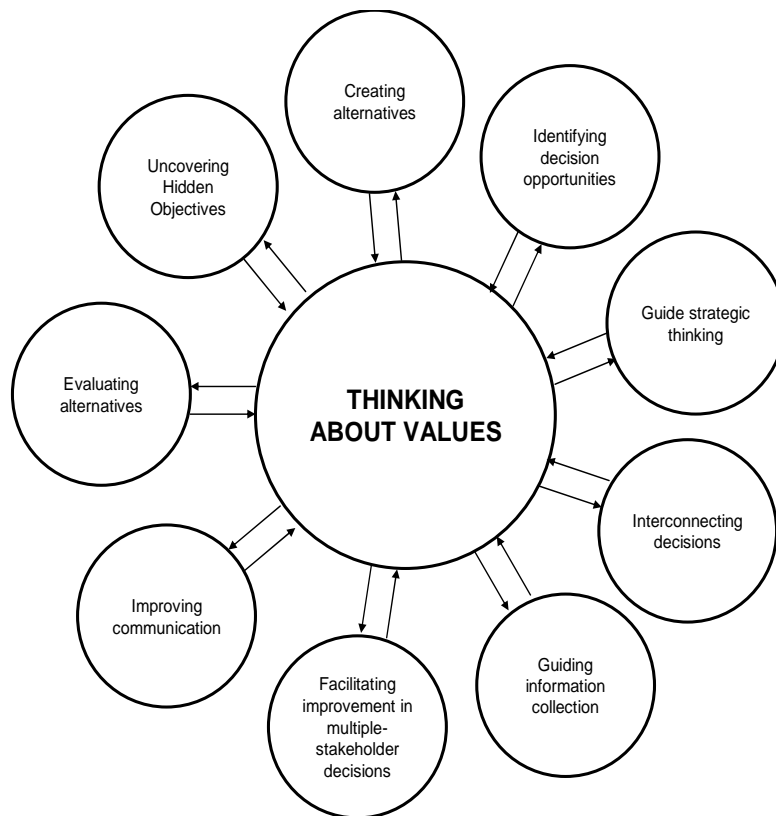


Figure 2: Overview of Value Focused Thinking (Keeney, 1992:24)

The following example of the decision for purchasing a family automobile shows the benefits of using VFT as opposed to AFT. Approached via AFT, the DM would think

about past car (note, this is a highly specific definition of automobile) purchases that he has made. The DM decides to see what the dealership has to offer. After arriving at the dealership, the DM tells the salesman he needs a “family car.” The salesman brings out 3 of his best selling family cars, which are all full-size sedans. After looking at the cars (alternatives) the DM evaluates the cars on factors common to all three: most “sportiness”, gas mileage and safety. The DM has limited himself in this approach both in objectives and in alternatives.

Approached via VFT, the DM would think about values he considers in purchasing an automobile. Suppose the DM chooses the same values: “sportiness,” highest gas mileage, and highest safety. In his critical thinking about the decision context, the DM realizes that a family automobile means kids and perhaps parents will also need to be comfortable in the car. The DM describes his values to his spouse, who then offers some of her suggestions: there will be a lot more luggage on trips than just himself and his spouse, so cargo room is very important; she would like the ability to haul more items from the home improvement store; and “sportiness” is not something to think about in a family automobile. Likewise, she suggests looking at several automobile dealerships to get a better picture of what alternatives exist. Ultimately, the DM removes the “sportiness” objective and comes up with three more objectives: most passenger room, most trunk space, and highest towing capacity. The DM tries to identify alternatives that address the five values. He identifies three types of full-size sedans, two trucks with passenger cabins, a bus, a full-size van, three types of station wagons, and two SUVs. He then proceeds to the dealerships with all of these alternatives in mind.

This simple example demonstrates how VFT creates alternatives, interconnects decisions, guides information collecting, improves communication, and uncovers hidden objectives.

Ultimately, to analyze a decision using VFT, a method is needed to evaluate alternatives based on the values. A value hierarchy structure is created based on objectives which are, as stated earlier, the explicit realizations of the values of interest. The value hierarchy will provide the structure in which to measure the decision alternatives.

The first highly important step in creating the value hierarchy is to create objectives. It is important to note that “objectives require three features: the decision context, an object, and a direction of preference” (Keeney 1996:538). We can use an automobile buying example to illustrate this. The objective could be maximizing fuel efficiency. The decision context is buying an automobile, the object is fuel efficiency, and the direction of preference is assumed to be “more is better”.

Keeney offers a list of techniques to identify a DM’s objectives through a series of insightful yet simple questions. These are listed in Table 1.

Table 1: Techniques for Identifying Objectives (Keeney, 1994:35)

1. **Develop a wish list.** What do you want? What do you value? What should you value?
2. **Identify alternatives.** What is a perfect alternative, a terrible alternative, some reasonable alternative? What is good or bad about each?
3. **Consider problems and shortcomings.** What is wrong or right with your organization? What needs fixing?
4. **Predict consequences.** What has occurred that was good or bad? What might occur that you care about?
5. **Identify goals, constraints, and guidelines.** What are your aspirations? What limitations are placed on you?
6. **Consider different perspectives.** What would your competitor or your constituency be concerned about? At some time in the future, what would concern you?
7. **Determine strategic objectives.** What are your ultimate objectives? What are your values that are absolutely fundamental?
8. **Determine generic objectives.** What objectives do you have for your customers, employees, shareholders, yourself? What environmental, social, economic, or health and safety objectives are important?
9. **Structure objectives.** Follow means-ends relationships: Why is that objective important? How can you achieve it? Be specific: What do you mean by this objective?
10. **Quantify objectives.** How would you measure achievement of this objective? Why is objective A three times as important as objective B?

The objectives that are obtained can be categorized as either fundamental or means objectives. Keeney provides guidance on fundamental versus means objectives (1992:34-35). Fundamental objectives are those which concern the ends that the DM values in a specific decision context. Means objectives are methods to achieve those ends. Applied again to the automobile purchase example, a fundamental objective would be maximizing safety. A means objective might be maximizing number of airbags. In

order for objectives to be useful in creating and evaluating decision alternatives, as well as guiding the decision making process, they must possess the properties listed in Table 2. Ideally, these properties are inherent to fundamental objectives. The table lists both the property and reasoning for having each property.

Table 2: Desired Properties of the Set of Fundamental Objectives (Keeney, 1992:82)

1. *Essential*, to indicate consequences in terms of the fundamental reasons for interest in the decision situation.
2. *Controllable*, to address consequences that are influenced only by the choice of alternatives in the decision context.
3. *Complete*, to include all fundamental aspect of the consequences of the decision alternatives.
4. *Measurable*, to define objectives precisely and to specify the degrees to which objectives may be achieved.
5. *Operational*, to render the collection of information required for an analysis reasonable considering the time and effort available.
6. *Decomposable*, to allow the separate treatment of different objectives in the analysis.
7. *Nonredundant*, to avoid double-counting of possible consequences.
8. *Concise*, to reduce the number of objectives needed for the analysis of a decision.
9. *Understandable*, to facilitate the generation and communication of insights for guiding the decision-making process.

2.4.2 Value Hierarchies

Once the objectives are determined, they can be organized in the form of a value hierarchy (VH). A VH is “a value structure with a hierarchical or ‘treelike’ structure” (Kirkwood 1997:12). The hierarchy is in the form of vertical branches and horizontal tiers consisting of the fundamental objectives and their sub-objectives. The fundamental objectives are located in the first tier, and the sub-objectives are at all lower levels of the

hierarchy. At the lowest tier of the hierarchy are the measurable attributes. If the fundamental objectives possess the 9 desired properties from Table 2, the corresponding VH has several important advantages specified in Table 3.

Table 3: Advantages of Fundamental Objectives Based Value Hierarchy (Keeney 1992:86-87)

1. The higher levels of an objectives hierarchy relate to fairly general concerns, such as the environment, economics, health and safety, and flexibility. Consequently, they can be identified relatively easy.
2. Higher-level objectives provide a basis for specification of lower-level objectives.
3. A hierarchy helps identify missing objectives, since logical concepts of the specification process can fairly easily identify holes in the hierarchy.
4. The distinctions between means objectives and fundamental objectives become clearer as the objectives hierarchy is structured.
5. Situations where redundancy or double-counting might occur can often be identified within the logic of an objectives hierarchy.
6. It is easier to identify attributes to measure the achievement of more specific (lower-level) objectives than of more general (higher-level) objectives.
7. The attributes for lower-level objectives collectively indicate the degree to which the associated higher-level objective is achieved.
8. The complete set of lowest-level attributes for a fundamental objectives hierarchy provides a basis for describing the consequences in the decision problem and for assessing an objective function appropriate for the problem.

The VH has five important properties: completeness, nonredundancy, decomposability, operability, and small size (Kirkwood 1997:16-19). Keeney and Raiffa reference the same properties to sets of attributes (Keeney 1992:82-86; Keeney & Raiffa 1993). Completeness means the combined values at every tier in the hierarchy describe all values relevant to the decision problem (Kirkwood 1997:16). Likewise, the lowest

level objectives should be adequately measured by the attribute(s). Completeness is sometimes referred to as “collectively exhaustive” (Kirkwood 1997:17). A VH is non-redundant if each objective appears only once in the hierarchy (Kirkwood 1997:17). If there is redundancy in the objectives will be “double counted” in the final evaluation giving them more weight than intended. Nonredundancy is sometimes referred to as “mutual exclusivity” (Kirkwood 1997:17). Decomposability means the branches of the VH can be evaluated separately. It is related to preferential independence and is a sufficient condition for using multi-attribute additive value functions (Keeney & Raiffa 1993:53). Operability addresses how well the model is understood by all of those involved in the decision (Kirkwood 1997:18). The VH is a tool developed by the analyst and used to assist the DMs in making decisions. If the DMs cannot understand the VH, it will not help them to make a decision. Small size refers to the dimensionality of the VH. Smaller is better, assuming the VH is complete. Extra objectives only increase the difficulty of analysis and the complexity of understanding.

The VH has one decision at the top of the hierarchy. The fundamental objectives make the first tier and then sub-objectives make up every sequential tier. Objectives become more specific in the lower tiers. As soon as the objective becomes measurable with a single dimensional value function (SDVF) or a group of SDVFs, there is no need to “drill down” any further. Typically, when a quantitative measure is desired, more specific objectives are needed. However, a qualitative assessment can typically be given for a much higher-level objective. Keeney’s guidance states, “When dividing an objective into sub-objectives, at any level, care must be taken to insure that all facets of the higher objective are accounted for in one of the sub-objectives. However, we must

guard against a proliferation of the hierarchy in the lateral direction as well as the vertical” (Keeney & Raiffa 1993:43). In other words, bigger is not necessarily better. The sub-objectives should be numerous enough to capture the decision, but few enough to be analyzed effectively and not diminish the impact of the individual sub-objectives.

An example of a value hierarchy is shown in Figure 3. It should be noted that the number of objectives does not need to be uniform across each tier. In fact, many hierarchies are lopsided depending on how quickly a fundamental objective can be deconstructed into sub-objectives and how easily a sub-objective can be measured with SDVFs.

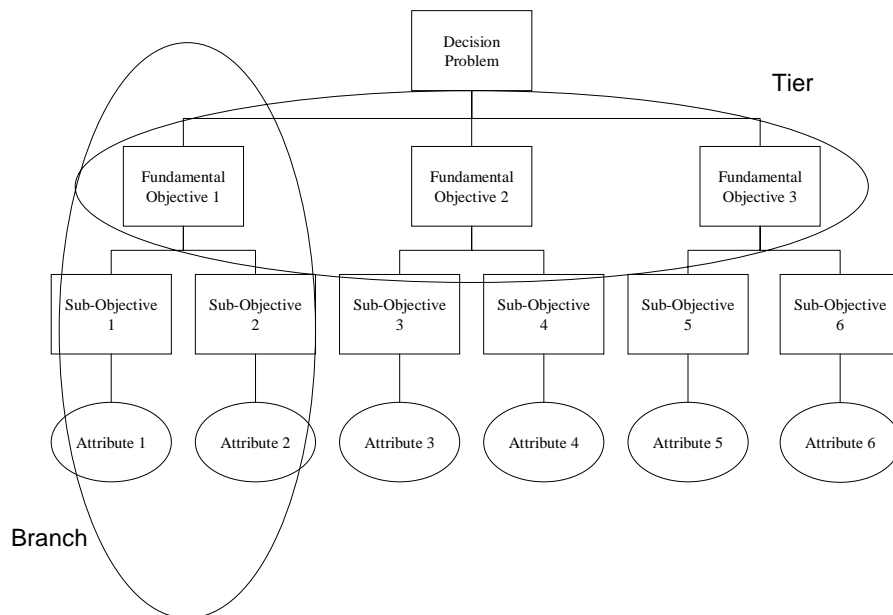


Figure 3: Example of a Generic Value Hierarchy

It should also be noted that a proper hierarchy should not have only one sub-objective underneath another one. If a situation like this occurs, it is showing that an

objective has unnecessarily been over-specified (Knighton 2006). If the fundamental objective cannot be measured, then the sub-objective should be moved up one tier becoming the fundamental objective. If the fundamental objective can be measured, the sub-objective can be eliminated. This process is illustrated in Figure 4.

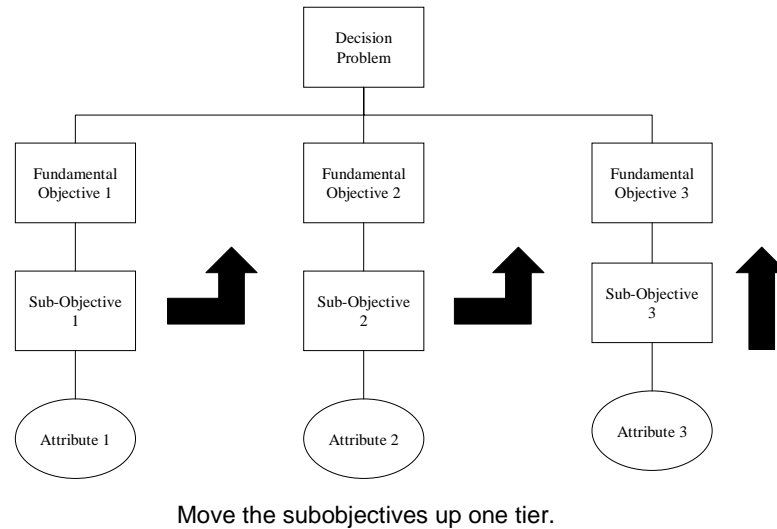


Figure 4: Improper Value Hierarchy

The hierarchy shown in Figure 5 is developed from the VFT automobile purchase example previously mentioned. The VH requires three branches of objectives, specifically, highest fuel efficiency, highest safety and most useable interior room.

This VH is non-uniform due to the level in which each objective could be deconstructed. Fuel efficiency could be measured directly. However, the objective of most useable interior room had to be deconstructed further in order to be understood as to what composed “usable interior room.” The process stopped when a logical measurement could be obtained. If the objectives illustrate all the DM’s values, then the

VH is complete. Likewise it is operable as most people can understand the objectives and measures in the hierarchy. It is nonredundant as none of the objectives overlap. It is assumed to be decomposable.

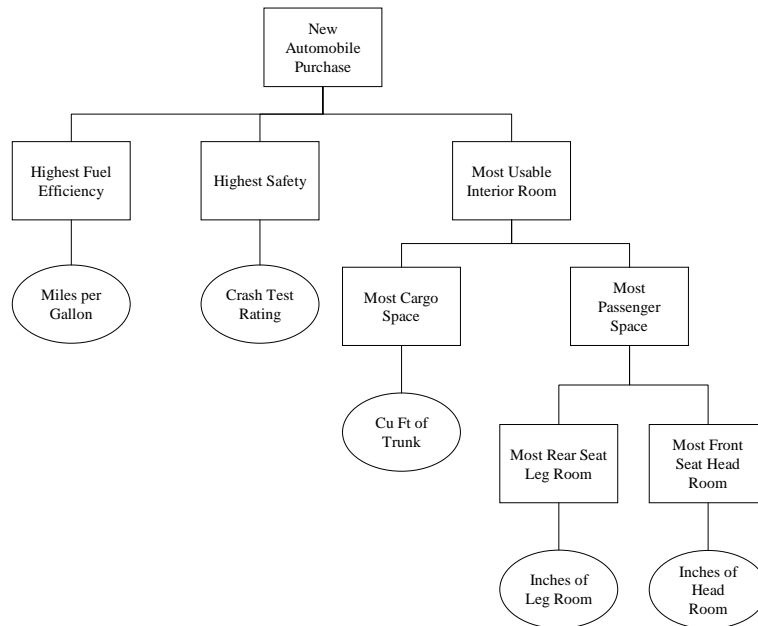


Figure 5: VH of Selected Objectives from Automobile Purchasing Example

2.4.3 Objective Attributes

After the objectives are identified and structured, a measurement of each objective’s achievement must be found to evaluate the alternatives. These measurements are the attributes. Attributes are sometimes known in the literature as measures of effectiveness, performance measures, metrics, or criterion. The word attribute will be used through the remainder of the thesis.

Attributes can be defined on a combination of four types of scales: direct, proxy, natural, or constructed (Kirkwood 1997). Keeney and Raiffa only focused on an abbreviated list of scales: direct and proxy (1993). In VFT, Keeney describes three

scales: natural, constructed and proxy (1992). Since Kirkwood offers the most comprehensive look at attribute scales, this study focuses on these definitions to categorize attributes.

A direct scale directly measures how well an objective is met (Kirkwood 1997:24). A proxy scale *indicates* how well an objective is met, but does not measure the degree by direct means (Kirkwood 1997: 24). A natural scale is a general use scale with a common interpretation by a majority of people (Kirkwood 1997:24). A constructed scale is one that is created for a specific decision to measure how well an objective is met (Kirkwood 1997:24). Examples of all four types of attributes are shown in Figure 6.

	Natural	Constructed
Direct	Net Present Value Time to Remediate Cost to Remediate System Reliability Bandwidth per sec Revisit time 1	Olympic Diving Scoring Weather Prediction Categories Project Funding Categories R&D Project Categories 3
Proxy	Gross National Product (Economic growth) Site Cleanup (Time to Remediate) Number of Subsystems (System Reliability) 2	Performance Evaluation Categories (Promotion Potential) Instructor Evaluation Scales (Instructor Quality) Student Grades (Student Learning) 4

Figure 6: Examples of Attribute Types (Weir 2006)

Developing attributes and measurement scales is often difficult. Kirkwood offers some points to think about when trying to accomplish this task (1997:25-28). However, he does not say one particular scale is better than the other. A study by Parnell et al. states that attributes are preferred in the order of decreasing preference with 1 identifying

the most preferred is shown in Figure 6 (Parnell et al. 2002). Instead it seems that this is highly dependent on the decision situation. Natural scales do not take as much time to develop the scale definition (Kirkwood 1997:25). Natural scales also may be less controversial (Kirkwood 1997:25). A difficulty with natural scales is that “they may not be easy to come by, and you may have to use a proxy scale in order to find a natural scale for your evaluation consideration” (Kirkwood 1997:25). An example illustrating the difficulties in how far to subdivide sub-objectives in order to reach a natural scale is also discussed leading to pros and cons of using natural vs. constructed scales (Kirkwood 1997:26-27). Likewise, a discussion illustrating the difficulties in choosing a more operable constructed scale vs. a precise natural scale is presented (Kirkwood 1997:26-28). Finally, the specificity of the scale levels is discussed in whether more or less specificity is better (Kirkwood 1997:28).

It seems the choice of scale for an attributes depends on ease of measurement, defensibility, and understanding of the DM and SMEs. The scale should be something that the DM, the analyst, or a subject matter expert can reasonably measure, but should also reflect a logical reasoning as to its measurement of the attribute. Also, given a description of the measure and scale, it should be reproducible.

The hierarchy in Figure 5 shows attributes at the lowest tier of each branch. The attributes under highest fuel efficiency and most usable interior room use direct natural scales. However, the attribute describing safety uses a direct constructed scale.

2.4.4 Single Dimensional Value Functions

Attributes will be used to score the alternatives. However, prior to scoring, a function needs to be created to measure the degree of attainment for each attribute. These

functions are called single dimensional value functions (SDVFs). SDVFs are monotonically increasing or decreasing and can be continuous or discrete, linear or non-linear. Figure 7 shows an example of a linear SDVF for miles per gallon from the decision hierarchy in Figure 5.

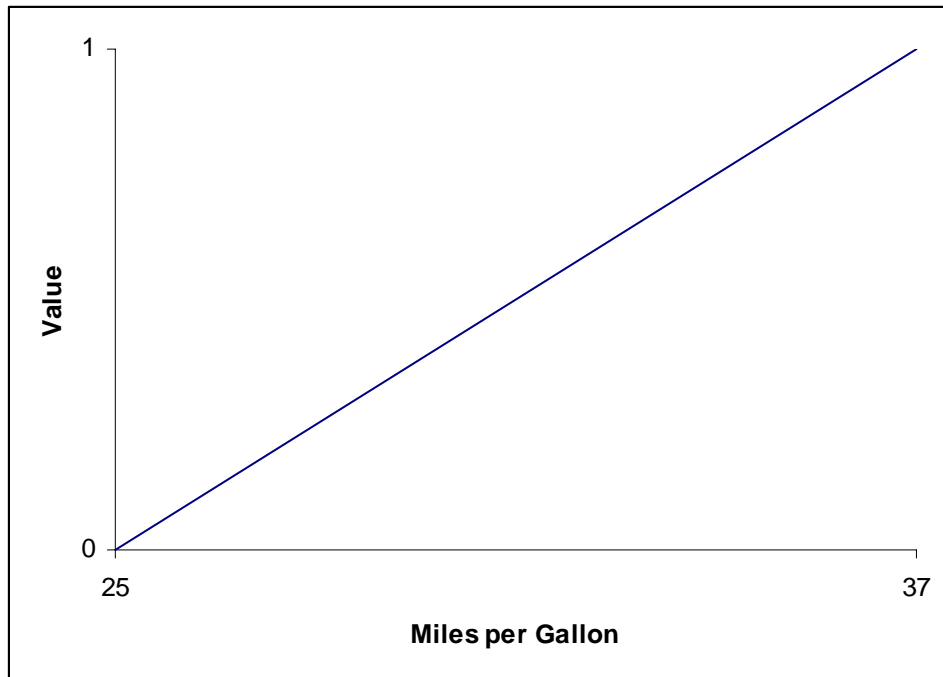


Figure 7: Linear SDVF

This SDVF implies the DMs value for gas mileage is monotonically increasing and a unit increase in miles per gallon is equally valued no matter where in the range between 25 and 37 miles per gallon the attribute is scored. Mileage between 0 and 25 mpg is valued at 0 while mileage above 37 mpg is seen as no additional value.

Another example of a continuous SDVF is shown in Figure 8. This SDVF measures the DM's value on cargo space using an exponential scale. Again, this is a monotonically increasing function with about 50% of the value is attained by achieving 70 cubic feet of trunk space.

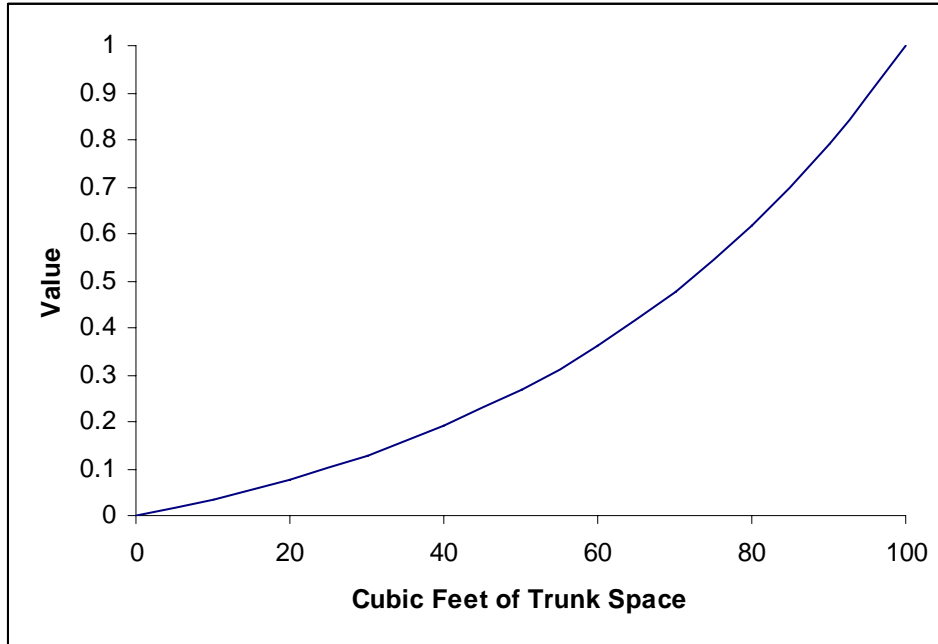


Figure 8: Exponential SDVF

A final example of a discrete SDVF is shown in Figure 9. This SVDF is based on a five-star rating system used by a hypothetical consumer safety report. The discrete model contains only the possible outcomes for each alternative: one, two, three, four or five stars. The DM assigns a value to each possible outcome. Again, the value is monotonically increasing.

Most decision problems are multi-objective. The objectives are often competing or conflicting; a way to evaluate trade-offs between the objectives is needed. As mentioned earlier, if the VH is decomposable a weighted additive function can be used for this purpose. This function is either an additive value function (AVF) or an additive utility function (AUF) if certainty equivalence analysis is conducted.

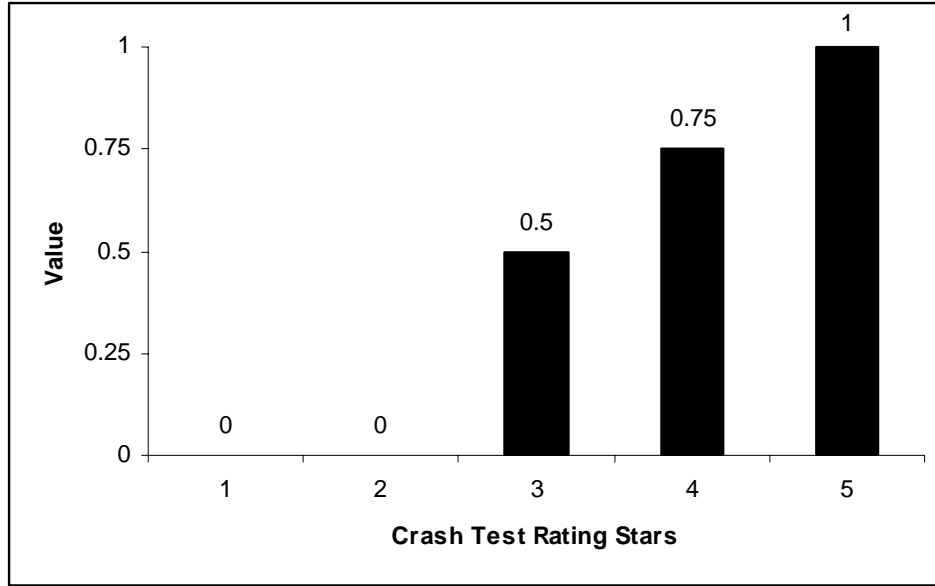


Figure 9: Discrete SDVF

2.4.5 Preferential Independence

There is one important independence concept necessary for use of the AVF: preferential independence. Attributes are mutually preferentially independent if preferences for every pair of attributes do not depend on the levels of the remaining attributes. In other words, the level of attainment for any attribute does not change the shape of the value function for any other attribute. Keeney illustrates these concepts in the following example and Figure 11:

Let X , Y , and Z be attributes with corresponding levels x , y , and z . Three X , Y planes are shown in the figure. Let A through G be consequences when $Z=z^0$. Likewise, the consequences A' through G' and A^* through G^* correspond to z' and z^* , respectively. Let the curved lines represent the indifference curves between consequences. If $\{X, Y\}$ is preferentially independent of Z , then the preference order of consequences in each X , Y plane will be the same and not depend on the level of Z . It is shown that for each level of Z , the consequences A through G are the same, with G indifferent to H . (Keeney 1992:135)

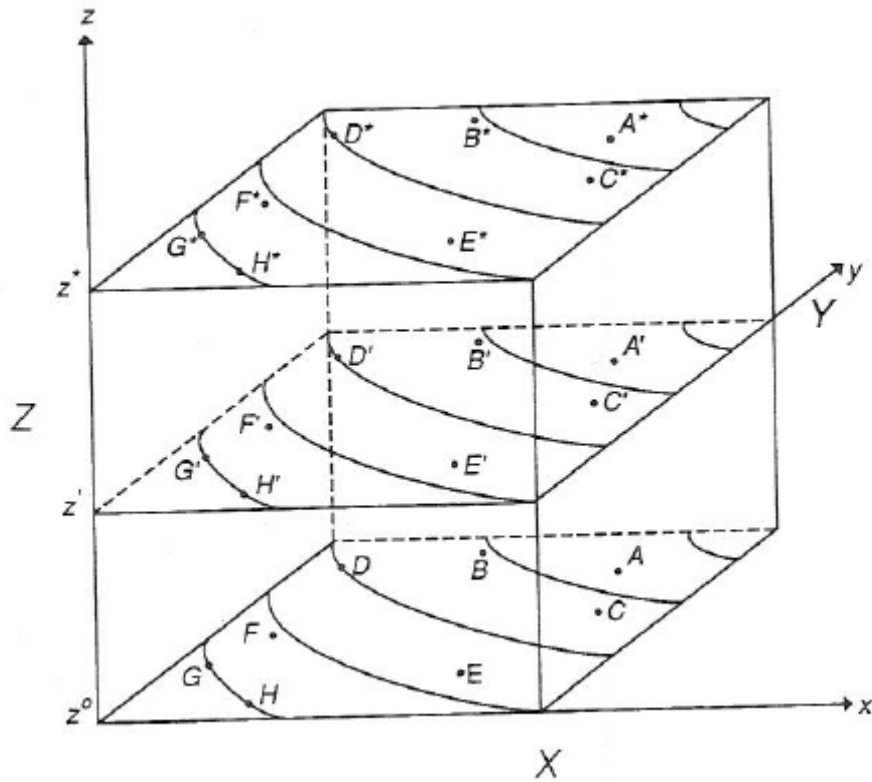


Figure 10: Additive and Preferential Independence Model (Keeney 1992:135)

Preferential independence also implies that the indifference curves do not change for any level of the complement attribute, Z , as is shown in Figure 11.

Having mutual preferential independence allows the use of the additive value function. However, the additive value model is accepted as robust to minor deviations to preferential independence (Merrick et al. 2005; Stewart 1991:19; Belton 1985; Edwards 1978). The additive function provides a convenient methodology to evaluate the sum of values for each objective in the hierarchy.

Given attributes $x_1, \dots, x_N, N \geq 2$, the additive value function

$$v(x_1, \dots, x_N) = \sum_{i=1}^N k_i v_i(x_i)$$

exists if and only if the attributes are mutually preferential independent, where v_i is the value function over x_i and the k_i are scaling constants.

2.4.6 Attribute Weights

The scaling constants of the AVF are also known as weights. These weights are known either as local or global weights depending on how they are determined. Local weights are the relative weights of the objectives or attributes in the same tier of a branch of the VH. Local weights are elicited from the DM. An illustration of local weights is shown in Figure 12.

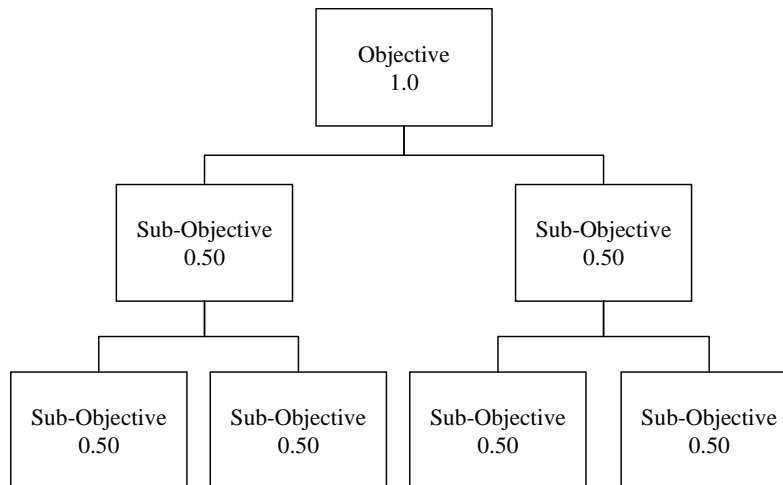


Figure 11: Generic Hierarchy with Local Weights

Global weights are the relative weights of the objectives in the entire VH and are obtained by multiplying local weights of all the parent objectives down through the VH. An illustration of global weights for Figure 11 is shown in Figure 12.

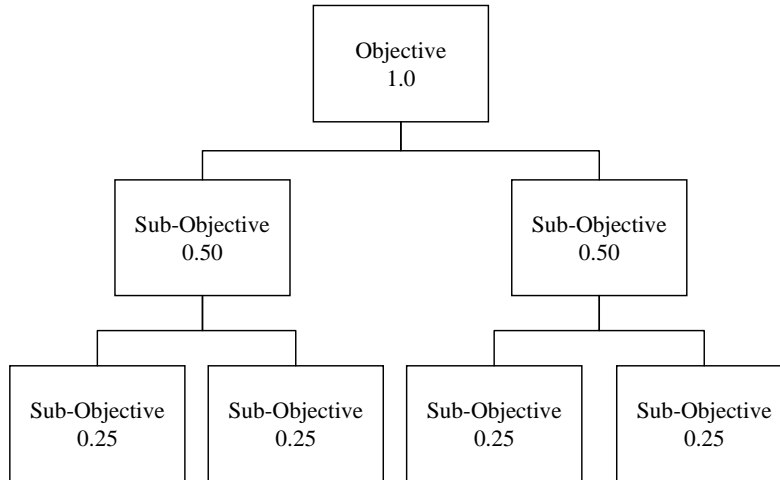


Figure 12: Generic Hierarchy with Global Weights

In the AVF, k_i are the global weights of each attribute where

$$\sum_{i=1}^N k_i = 1$$

where i indicates each attribute in the lowest tier and branch of the value hierarchy. The global weights allow the DM to establish trade-offs between the attributes. There are two basic approaches to acquire the local weights prior to establishing global weights.

In direct weighting, the DM provides the direct relative weighting for each objective or attribute in a tier. The weighting can be completed top-down, starting with the first tier, or bottom up, starting at the attribute level. There are several techniques to help elicit the direct weights from the DM. One example is the “marbles” technique, derived from the 100 point method (von Winterfeldt & Edwards 1986:284). For each tier the DM is given the task of allocating 100 marbles among the objectives or attributes in the tier with the number of marbles assigned as an indicator of the relative importance of the objective. Once the assignment is complete the local weights are easily calculated.

In swing weighting, the DM provides relative weights based on “swinging” each objective or attribute of a tier from its worst outcome to its best. Swing weighting captures the relative importance of the range of outcomes as well as the objectives themselves making it the preferred method. Because swing weighting considers the worst and best outcomes, it must be used in a bottom up fashion so that the worst and best outcomes for higher level objectives are clearly defined.

Another method is to set all of the objectives in a tier at their worst outcome and ask the DM(s) which single objective they would move to the best outcome – this is the most important objective in the tier. Fix the most important objective to its worst case and repeat the question. This process is repeated until a ranking of objectives is obtained. Next each objective is compared to the least (most) important objective to determine how much more (less) important it is. Since the weights must sum to 1, once all are specified in terms of the least (most) important objective it is simple to solve for the weight of the least (most) important objective and then calculate the remaining weights (See following example).

Continuing with the automobile purchase example and starting from the bottom up the sub-objectives of Most Rear Seat Leg Room (LR) and Most Front Seat Head Room (HR) appear under Most Passenger Space (PS). Suppose that among the alternatives the range for LR is 30” to 40” and the range for HR is 35” to 40”. The DM knows no one in his family is exceptionally tall and since the range for HR is small decides he would prefer a vehicle with LR of 40” and HR of 35” to one with LR of 30” and HR of 40” so the range of LR is more important than that of HR. In addition he

decides that the range of LR is 3 times as important as the range for HR. The local weights for LR and HR are calculated as follows:

$$w_{LR} = 3w_{HR}$$

$$w_{LR} + w_{HR} = 1$$

substituting

$$w_{HR} + 3w_{HR} = 1 \rightarrow 4w_{HR} = 1 \rightarrow w_{HR} = \frac{1}{4}$$

therefore

$$w_{LR} = 3\left(\frac{1}{4}\right) = \frac{3}{4}$$

The next tier to evaluate is Most Cargo Space (CS) and Most Passenger Space (PS). Among the alternatives, the range for CS is 14 to 40 cu. ft. For PS the range for (LR, HR) is (30", 35") to (40", 40"). While PS may be more important to the DM in general the range for CS is quite large. The DM would prefer an automobile with PS of (30", 35") and CS of 40 cu. ft. twice as much as one with PS of (40", 40") and CS of 14 cu. ft. Calculating the local weights as shown earlier yields

$$w_{PS} = \frac{1}{3} \quad w_{CS} = \frac{2}{3}$$

The local weights for Fuel Efficiency (FE), Safety (S) and Usable Interior Room (UIR) are derived in a similar fashion to be

$$w_{FE} = \frac{1}{4} \quad w_S = \frac{1}{2} \quad w_{UIR} = \frac{1}{4}$$

The local weights can then be used to calculate the global weights by multiplying the local weights along the branches leading to the objective.

$$k_{FE} = w_{FE} = \frac{1}{4} \quad k_S = w_S = \frac{1}{2} \quad k_{UIR} = w_{UIR} = \frac{1}{4}$$

$$k_{CS} = w_{CS} \cdot w_{UIR} = \frac{2}{3} \cdot \frac{1}{4} = \frac{1}{6} \quad k_{PS} = w_{PS} \cdot w_{UIR} = \frac{1}{3} \cdot \frac{1}{4} = \frac{1}{12}$$

$$k_{LR} = w_{LR} \cdot w_{PS} \cdot w_{UIR} = \frac{3}{4} \cdot \frac{1}{3} \cdot \frac{1}{4} = \frac{1}{16}$$

$$k_{HR} = w_{HR} \cdot w_{PS} \cdot w_{UIR} = \frac{1}{4} \cdot \frac{1}{3} \cdot \frac{1}{4} = \frac{1}{48}$$

Note that only the local weights attached to measurable attributes will be used in the AVF. The sum of these weights should be 1.

$$k_{FE} + k_S + k_{CS} + k_{LR} + k_{HR} = \frac{1}{4} + \frac{1}{2} + \frac{1}{6} + \frac{1}{16} + \frac{1}{48} = 1$$

The weights are shown in Figure 13 in each of their respective sub-objectives.

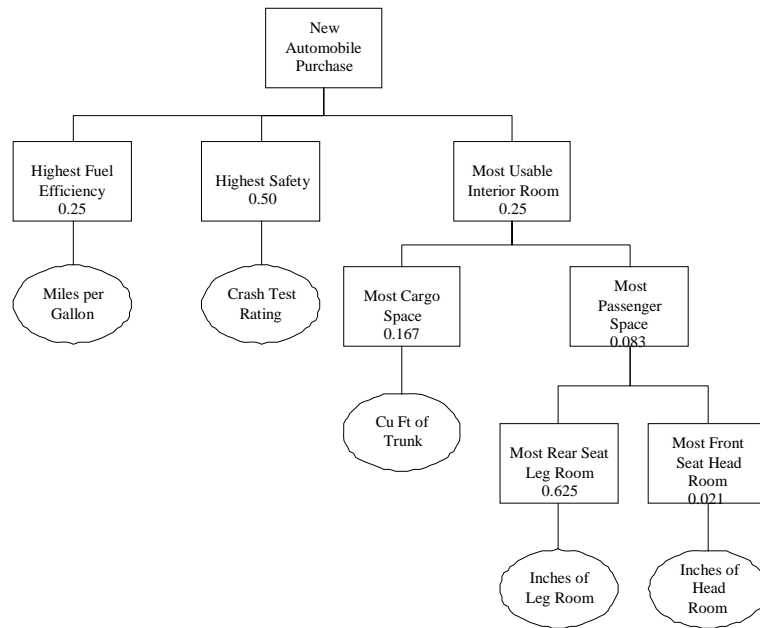


Figure 13: Computed Weights for Automobile Example

The global weights in Figure 13 may seem small, especially in a large VH; however, directly modifying the global weights implicitly modifies the local weights. If the DM is uncomfortable with the global weights, the local weights can be reviewed. In

addition, when there are a large number of objectives in a tier it may be difficult for the DM to provide global relative weights.

There are strengths and weaknesses to each method of weighting. The “marbles” method provides a simple to understand technique for the DM to assign weights to objectives and sub-objectives. However, it does not seem to capture the relative importance of the range of the objectives and sub-objectives. Swing weighting, on the other hand, determines the weights making sure to encompass the importance of the range. It is slightly more difficult initially to understand and implement than the direct “marbles” method. Regardless of how the weights are developed, sensitivity analysis can be used to evaluate the impact different weights on the ranking of alternatives.

2.5 Standards of Obtaining Values

The process of VFT is highly dependent on the inputs and interaction with the DM(s). The process can take a significant amount of the DM(s) time.

Clearly, the best source of values for a decision is the highest level DM(s) who will make the decision. Unfortunately, these individuals are often unavailable to provide the analyst with the formulation of values, objectives, and weighting criteria. In their Foundations 2025 study, Parnell et al. (1998) describe the Platinum, Gold, and Silver Standards to characterize the level of involvement with the DM(s) in analyzing a decision problem.

The Platinum Standard uses interviews with the senior stakeholders and DMs to help formulate the VH. When a Platinum Standard is not available, the Gold Standard uses high level policy or strategic planning documents approved by the decision maker to formulate the VH. Finally, when neither the Platinum or Gold Standards are available,

the Silver Standard uses subject matter experts and representatives of the DMs to formulate the VH. Defining and using these standards provides a common framework for researchers to understand how a VH was formulated.

2.6 Using VFT to Evaluate SOPS

Currently, there is no defined methodology used to evaluate SOPS. A method is needed urgently, as indicated by the 2004 DSB report on SOPS:

At this time the Secretary [of Defense] is not adequately informed regarding our readiness for success in stability operations... He is not fully informed whether we are better or worse prepared to succeed at any of the essential elements of stability operations within a region... Without that knowledge, that management information, he can lead but he cannot fully manage. He cannot with full confidence advise the President and the Congress regarding our potency for stability operations that may be required by various courses of action under consideration. (Defense Science Board 2005b:27)

Directive 3000.05, issued in November 2005, is very specific about needing the abilities to evaluate the DoD's progress in SOPS and to predict failing states. However, there has been no open source publication proposing a methodology to provide this feedback. Currently, studies by both the DoD and DoS state that much of the decision making and evaluation is "ineffective" and "ad hoc" (Defense Science Board 2004; Serafino & Weiss 2005; U.S. Department of Defense 2005).

Guidance from both high-level documents like Directive 3000.05 and SOJOC, and experts in the field like Covey, Dobbins, Manwaring, and Orr all suggest the importance of making SOPS decisions from a strategic level. Strategic thinking and planning take center stage for military operations. The military currently uses Effects Based Operations (EBO) to plan, conduct and assess military operations.

EBO is defined by the United States Joint Forces Command Joint Warfighting Center Joint Doctrine Series Pamphlet 7 (JWFC Pam 7) as:

Operations that are planned, executed, assessed, and adapted based on a holistic understanding of the operational environment in order to influence or change system behavior or capabilities using the integrated application of selected instruments of power to achieve directed policy aims. (JFWC Doctrine Pam 7 2004)

JWFC Pam 7 establishes that EBO as a whole is comprised of four components: System-of Systems Analysis (SoSA), Effects-Based Planning (EBP), Effects-Based Execution (EBE), and Effects-Based Assessment (EBA).

In particular, EBP, like the initial stages of VFT, require the DM to clarify policy aims and goals to be transformed into objectives. EBE then implements the actions that fulfill EBP. Finally, EBA identifies progress towards the DM's objectives. This process is comparable to VFT, and is clearly shown as an objectives-driven strategic process.

Parnell comments that objectives-driven approaches are better at offering solutions to strategic decision problems. "The objectives-driven approach is more applicable for strategic decisions. In these situations, the alternatives are usually not specified and the decision-makers need to think clearly about their values and objectives" (Parnell et al. 1998:1338). The DSB supports this idea as applied to SOPS stating, "appropriate objectives and metrics should be established" (Defense Science Board 2004:45). Several objectives are obvious in the implementation of SOPS. From section 2.3 above, the research shows how the main fundamental objectives for SOPS are: increase security, increase governance, increase rule of law, increase social services, and increase economic activity.

VFT has been shown to be successful in helping DMs make objective-based strategic decisions. The following major analyses show how VFT has been able to impact both the civilian and military arenas. Although they are brief accounts, they show that VFT indeed can be used to do everything from analyzing values, to the creation of an evaluation model, to prioritization of future capabilities.

Keeney and Raiffa show its application is highly effective in identifying and structuring objectives through their work for Conflict Management, Inc (1994). Keeney and McDaniels' work with British Columbia Hydro identified, structured, and quantified strategic objectives which led to identifying decision opportunities and creating better alternatives (Keeney, 1996). Gregory and Keeney use VFT to do the same at an international level with multiple stakeholders developing mineral resources in Malaysia (Gregory & Keeney, 1994). Parnell et al. applied VFT for military applications by developing a value model for evaluating future air and space forces (1998), which successfully scored 43 systems. The Information Technology Operations Center from the US Military Academy has used VFT in a classified study of Operation Enduring Freedom (OEF) to evaluate the progress of the global war on terrorism in Afghanistan and Phase IV Operations (Kwinn et al. 2004).

The decisions faced when conducting SOPS have many multiple competing conflicting objectives. These decisions must be made from a strategic viewpoint. Since VFT is objective-based and effective in making strategic decisions, it seems highly appropriate to model SOPS with VFT. The next chapter will develop a VH to help DMs prioritize SOPS and evaluate progress in stabilizing a failing or failed state.

2.7 Summary

This chapter introduced SOPS and provided background on its historical implementation. It showed RAND and CSIS studies that critically analyzed the effectiveness of SOPS over its lifetime, and illustrated the need to improve SOPS. A combined definition of SOPS was created through analysis of SOPS experts (Manwaring, Orr, Covey) and DoD documentation (DoD Directive 3000.05 and SOJOC). The chapter concluded with a thorough introduction to Value Focused Thinking and described current uses of VFT and the value of using VFT to address the SOPS issues. The principles reviewed in this chapter are applied in Chapter 3 to develop a value hierarchy for U.S. operations.

3. Creation of a SOPS Value Hierarchy

3.1 Introduction

This chapter applies VFT to create a SOPS value hierarchy. First, the problem of nation-state stability is defined. Next, values are extracted from military doctrine and subject matter expert opinion through published text. A value hierarchy is constructed from these objectives and evaluated based on the desired characteristics of VFT. Attributes and notional value functions are then created to assess the level of attainment of the measurable sub-objectives. Finally, a notional weighting scheme is added to the value hierarchy.

3.2 Problem Definition

To determine appropriate values and objectives for a decision problem, one must first spend time understanding the problem at hand. It is imperative that the DM and the analyst understand the problem or the values and subsequent objectives developed may not properly address the problem producing poor analysis results and providing faulty insight to the DM.

The decision context for this thesis is established through the 2002 National Security Strategy in which President Bush states that the U.S. is threatened by failing and failed states (U.S. National Security Council 2002). A logical conclusion is then stabilizing failing nations will reduce the threat to the U.S. Therefore, the decision context is to bring stability to a failing state in a manner favorable to the U.S. SOPS are the operations conducted to bring about stability.

3.3 Objectives and Values

Directive 3000.05 offers guidance on the objectives for SOPS and is a Gold Standard document for this thesis with buy-in from the most senior decision makers. In addition, many SOPS experts have described values and objectives for SOPS. The use of objectives from SOPS experts is a Silver Standard approach. This research combines the Gold and Silver standard approaches to integrate senior decision maker values with subject matter expert opinion. Objectives from all sources are gathered and through themed grouping combined into a comprehensive value hierarchy.

Directive 3000.05 first is examined to gain perspective on top SOPS values and objectives from senior decision makers. Although the document itself does not specifically list values, the objectives are easily identified. Paragraph 4.2 states:

Stability operations are conducted to help establish order that advances U.S. interests and values. The immediate goal often is to provide the local populace with security, restore essential services, and meet humanitarian needs. The long-term goal is to help develop indigenous capacity for securing essential services, a viable market economy, rule of law, democratic institutions, and a robust civil society. (U.S. Department of Defense 2005:2)

The objectives of security, essential services, humanitarian needs, viable market economy, rule of law, democratic institutions and robust civil society can be derived from Paragraph 4.2. These are fundamental objectives of SOPS.

Furthermore, under the subsections of Paragraph 4.3 and Paragraph 4.5, the directive states that SOPS will:

Rebuild indigenous institutions including various types of security forces, correctional facilities, and judicial systems necessary to secure and stabilize the environment; revive or build the private sector, including encouraging citizen-driven, bottom-up economic activity and constructing necessary infrastructure; and develop representative governmental institutions. Their functions shall include ensuring security, developing local governance structures, promoting bottom-up economic activity, rebuilding infrastructure, and building indigenous capacity for such tasks. (U.S. Department of Defense 2005:2-3)

This passage provides some means objectives for achieving the fundamental objectives.

To establish the top tier fundamental objectives of a Value Hierarchy (VH), affinity grouping methodology was used. Prior to the affinity grouping, the objectives of Directive 3000.05 were combined in tables. The objectives from Paragraph 4.2 are listed in Table 4.

Table 4: Objectives from Directive 3000.05 Paragraph 4.2

Establish of order	Develop viable market economy
Advance U.S. interests and values	Develop rule of law
Provide security	Develop democratic institutions
Restore essential services	Develop robust civil society
Meet humanitarian needs	

The objectives from Paragraph 4.3 and 4.5 are listed in Table 5.

Table 5: Objectives from Directive 3000.05 Paragraph 4.3 and 4.5

Rebuild indigenous institutions	Construct necessary infrastructure
Rebuild security forces	Develop representative governmental institutions
Rebuild correctional facilities	Ensure security
Rebuild judicial systems	Develop local governance structures
Secure and stabilize environment	Promote bottom-up economic activity
Revive or build private sector	Rebuild infrastructure
Encourage citizen-driven, bottom-up economic activity	Building indigenous capacity for tasks

The values are extracted from the objectives by asking “why is that important” (WITI test) (Clemen 1996). The implied values are shown in Table 6.

Table 6: Imparted Values from Directive 3000.05 Objectives

Order	Infrastructure
Security	Essential Services
Humanitarian needs	Democracy
Citizen-driven Economy	Justice
Rule of Law	Private Sector
Government	Environment
Civil Society	Economic Activity
Peace	Governmental Institutions
Indigenous Capacity for tasks	

The values are organized by using affinity groupings. However, affinity grouping follows a similar purpose to that of affinity diagramming: to convert large groups of data into smaller understandable groups. This seems to provide an adequate way to distill groups of data to their basic components.

Affinity diagramming was not used due to the fact that many of the objectives from the Silver and Gold Standard materials were stated not in task form, but in key words throughout the various literature. These words and groupings of words do not possess the verb and noun pairings that are used for affinity diagramming. It was assumed that affinity grouping will provide adequate values in deconstructing objectives.

The first affinity grouping arranges the values by similar terms. The values of peace and indigenous capacity for tasks is removed from the list due to the assumption that peace will be brought about by the accomplishment of the subobjectives and that indigenous capacity for the tasks will be a subset of each of the objectives determined (Table 7). The second affinity grouping assigns a “theme” value for each group of values (Table 8).

Table 7: First Grouping of Directive 3000.05 Values

Security	Democracy
Humanitarian needs	Governmental Institutions
Civil Society	Government
Essential Services	Economic Activity
Infrastructure	Private Sector
Environment	Citizen-Driven Economy
Rule of Law	
Justice	
Order	

Table 8: Second Grouping of Directive 3000.05 Values

Security	Governance
Social Well-Being	Economy
Rule of Law	

The final value list has five fundamental objectives: Security, Social Well-Being, Rule of Law, Governance, and Economy. These values encompass the objectives from Directive 3000.05. It should again be made known that these are the accepted *DoD* objectives from the viewpoint of a western democratic nation.

Directive 3000.05 lacks sufficient detail to determine the sub-objectives for the lower tiers. This research uses SOPS subject matter experts' (SME) writings as indirect evaluations to confirm the top-tier fundamental objectives and determine lower-level tier objectives. The published texts of these experts are:

- *Beyond Declaring Victory and Coming Home: The Challenges of Peace and Stability Operations* by M. Manwaring and J. Joes
- *Winning the Peace: An American Strategy for Post-Conflict Reconstruction* by Center for Strategic and International Studies, edited by R. Orr
- *The Quest for Viable Peace: International Intervention and Strategies for Conflict Transformation* by J. Covey et al

Before determining the sub-objectives it is important to define the fundamental objectives from Directive 3000.05. The previously mentioned texts offer definitive terminology for each objective. These definitions will frame the search for sub-objectives.

Security is the prominent value and objective in all SME texts. Manwaring describes security in the chapter in his book, *Isolation of Belligerents*. The objectives that support this chapter seem to imply security is the defeat of insurgency (Manwaring & Joes 2000:55). Covey defines security in a similar fashion as the defeat of militant extremists (Covey et al. 2005:123). Security is defined by Orr as “protecting lives of citizens from immediate and large-scale violence and restoring the state’s ability to maintain territorial integrity” or “a condition of acceptable public safety, particularly the establishment of an environment wherein citizens can conduct daily business relatively free from violence or coercion directed at them by the government, organized crime, political organizations, and ethnic groups” (CSIS 2004:40). Both Covey’s and Manwaring’s definitions of security appear to be subsets of the broad security definition

offered by Orr. Therefore, this thesis used Orr's definition for the fundamental objective of security.

Social Well-Being, including Humanitarian Aid, is another fundamental objective stressed by Directive 3000.05. Manwaring focuses directly on humanitarian aid and the immediate sustenance of life and relieving of suffering by way of best practices, funding, human rights and emergency response systems (Manwaring & Joes 2000:69-74). Orr indicates that social well-being hinges on two factors: Education and Medical Care (CSIS 2004:83-85). Covey does not explicitly define social well-being, but does comment on the importance of humanitarian aid and the establishment of emergency and essential services, such as medical care, utilities, and transportation (Covey et al. 2005:225-229). A combined definition for Social Well-Being is sustenance of life and relieving of suffering by way of humanitarian aid, best practices, essential services, and emergency response systems.

Rule of Law is the third fundamental objective for Directive 3000.05. Manwaring focuses on legitimacy of rule by establishing good leaders and public order (Manwaring & Joes 2000:49-50). Orr defines Rule of Law as a comprehensive, six-element justice and reconciliation effort that involves law enforcement, judicial system, constitution and body of law, corrections system, and past abuse reconciliation mechanisms (CSIS 2004:90). Covey likewise defines Rule of Law by components. He states that Rule of Law can be defined by three systems: Judicial, Law Enforcement, and Corrections (Covey et al. 2005:168-184). Rule of Law defined by Orr is the most complete of the three and encompasses the other two and therefore will be used by this research.

The fourth fundamental SOPS objective is Governance. Manwaring identifies Governance in conjunction with Rule of Law. He defines Governance as establishing leaders and international involvement (Manwaring & Joes 2000:50). Orr uses both the U.S. Agency for International Development (USAID) and UN Development Program (UNDP) definitions. The USAID states, “Governance issues pertain to the ability of the government to develop an efficient and effective public management process... [that is able] to deliver basic services” (U.S. Agency for International Development (USAID), 1998:19). The UNDP has a much broader definition:

Governance is the exercise of economic, political, and administrative authority to manage a country’s affairs at all levels and the means by which states promote social cohesion, integration, and ensure the well-being of their populations. It embraces all methods used to distribute power and manage public resources, and the organizations that shape government and the execution of policy. [Governance] encompasses the mechanisms, processes, and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and resolve their differences. (UNDP, 2006:10)

These definitions essentially state Governance is a public management process that involves a constituting process, governmental capabilities, and participation of citizens. Covey defines Governance in terms of moderating political conflict. However, his objectives are essentially the same as Orr’s with the added objective of municipal and regional administrative structures (CSIS 2004:141). Therefore, a complete definition for Governance is a public management process that involves a constituting process, governmental capabilities, participation of citizens, and administrative structures.

Economy is the final fundamental SOPS objective. Manwaring minimally discusses the importance of economy through humanitarian relief and does not define it specifically. However, he does note that economic self-reliance, economic opportunity,

and the transition to a market economy are all needed for a stable economy (Manwaring & Joes 2000:69). Orr provides more detail on economy but likewise fails to explicitly define it. He states that economy is made up of the priority areas of macroeconomic needs, international trade, private sector market, and natural resource management (CSIS 2004:78-83). Covey devotes an entire chapter on economy discussing the relationships of wealth and power in a failed state. He denotes this topic as political economy. His definition of economy is not explicit either, but in defining the transition to a stable economy notes several important objectives: macroeconomic fundamentals, economic policy and reconstruction, and elimination of economic crime in the forms of grey and black markets (Covey et al., 2005:207-233). By combining the previous definitions, this thesis defines economy as a system comprised of policy, macroeconomic fundamentals, free market, and international trade that exchanges wealth, goods, and resources in an environment mostly free of economic criminal activity.

Table 9: Definitions of SOPS Fundamental Objectives

<p>Security: Protecting lives of citizens from immediate and large-scale violence and restoring the state’s ability to maintain territorial integrity</p> <p>Social Well-Being: Sustenance of life and relieving of suffering by way of humanitarian aid, best practices, human rights, essential services, and emergency response systems</p> <p>Rule of Law: Comprehensive, six-element justice and reconciliation effort that involves law enforcement, judicial system, constitution and body of law, corrections system, and past abuse reconciliation mechanisms</p> <p>Governance: Public management process that involves a constituting process, governmental capabilities, participation of citizens, and administrative structures</p> <p>Economy: System comprised of policy, macroeconomic fundamentals, free market, and international trade that exchanges wealth, goods, and resources in an environment mostly free of economic criminal activity</p>

With the fundamental objectives defined, they can be confirmed and expanded upon through the deconstruction of each of the SME's fundamental objective sets. The research applies the affinity grouping technique (Tables 6 through 8) to the remaining SME Gold and Silver Standard materials in order to provide verification of top level Directive 3000.05 objectives and provide more detailed branches of each fundamental objective in the SOPS value hierarchy.

This research accepts Directive 3000.05 objectives as the fundamental objectives necessary to establish stability from the DoD perspective. Directive 3000.05 is sparsely populated with objectives to achieve stability. Therefore, the research uses other Silver Standard materials by accepted SOPS SMEs: Manwaring and Joes, Orr, and Covey, to provide sub-objectives and attributes for the Directive 3000.05 objectives. In order to do this, affinity groupings of the Silver Standard materials were developed to provide a deconstruction of each of the five fundamental objectives of stability offered by Directive 3000.05. The objectives from all Silver Standard materials were then combined within each fundamental objective from Directive 3000.05. After combining the objectives through subsequent affinity groupings, sub-objectives and attributes were determined. It is noted that perhaps a full combining of all objectives from each of the Silver Standard materials may have led to additional fundamental objectives of stability. However, by using Directive 3000.05 as a proxy DM, the deconstruction of the sub-objectives within the fundamental objectives seems appropriate. Section 3.3.1 illustrates the affinity grouping of Manwaring and Joes stability objectives. Sections 3.3.2 and 3.3.3 illustrate the affinity groupings of other Gold and Silver Standard materials. Value Hierarchies (VH) were developed for each of the Gold and Silver Standards. However, they are just

for illustrative purposes and not used for any further analysis. These VHs are located in Appendix H.

3.3.1 Manwaring and Joes Objectives and Values

Manwaring offers four objectives defining SOPS in his text and offers a chapter for each. They are Establishment of Rule of Law and Order; Isolation of the Belligerents; Sustaining Life, Relieving Suffering, and Regenerating Economy, and Military Intelligence. His terminology aligns with the Directive 3000.05 fundamental objectives: Rule of Law, Security, Social Well-Being and Economy, with Intelligence listed as a sub-objective of Security. Each chapter describes one or more fundamental objectives of SOPS. Tables 10 through 13 list the sub-objectives for each of Manwaring's objectives pertaining to stability of a nation-state.

Table 10: Manwaring's Objectives for Establishment of Order and Rule of Law

Restore public order	Allow local political involvement
Detain enemies	Establish leaders
Try enemies in court	Establish elections
Regulate any aspect of civil life	Gain international authorization
Achieve status as privileged combatant to protect intervention force	

Table 11: Manwaring's Objectives for Isolating the Belligerents

Physically isolate insurgents	Create village militias
Separate insurgents from civilian population	Create small group of regular army in charge of defense
Erect fortified lines	Close sanctuaries used by insurgents
Erect impassable barriers	Develop military means
Clear and hold areas	Develop diplomatic means
Saturate areas with troops	Impede outside aid to insurgents
Establish policing units	Construct intelligence service
Establish reliable communication	Provide movement of troops and supplies
Establish sanctions on insurgent helpers	Establish storage and sale of food
Create blockhouse barriers and barbed wire	Establish amnesty
Use electrified fence	Publicize criminal acts done by insurgent leaders
Use minefields	Establish resettlement programs for long-time insurgents taking amnesty
Erect watchtowers	Pay cash or release prisoners for guns
Establish civilian resettlement	Separate insurgency from leaders
Morally isolate insurgents	Establish reforms
Maintain legitimate government	Divide and conquer based on ethnicity
Establish military tactics to do least damage to society and keep casualties low	Formalize rectitude
Secure government base areas	
Provide security for civilians	

Table 12: Manwaring's Objectives for Intelligence

Monitor and surveil enemies	Transition to indigenous capability
Professionalize and modernize indigenous Intel ops	Transition International/foreign military to domestic
	Transition International/foreign civilian control to domestic

**Table 13: Manwaring's Objectives for Sustaining Life,
Relieving Suffering, and Regenerating Economy**

Establish emergency relief (ER)	Understand how unity of effort is jointly forged between military/civilian orgs
Establish international orgs and structures for ER	Understand economic implications and responses for victims
Follow money	Rehab and develop community
Assure money follows mandate	Establish self-reliance
Hold agencies to accountability	Provide economic opportunity
Know, use, support ER systems	Transition socialist to market economies
Provide water	Create human rights accountability
Develop water purification	Develop human rights monitoring teams
Provide water delivery	Investigate abuses
Provide medical services	Create neighborhood watch
Provide immunization	Develop human rights laws at all levels
Provide preventative medicine	Teach human rights
Provide needs of women	Disseminate human rights
Provide needs of children	Administer justice
Provide food	Provide material
Mobilize food	Encourage professional cooperation
Distribute food	Establish economic intervention
Transport food	
Apply best practices from successful ER	

The sub-objectives describe many actions that must be completed to bring stability to a failing state. However, it appears that some of the sub-objectives address fundamental objectives other than those they are listed under. The objective Sustaining Life, Relieving Suffering, and Regenerating Economy is a combination of the fundamental objectives Social Well-Being and Economy. In Manwaring and Joes, the fundamental objective Governance is covered under Rule of Law. The sub-objectives are reorganized under the Directive 3000.05 fundamental objectives in Tables 14 through 17.

Table 14: Reorganized Objectives under Rule of Law

<ul style="list-style-type: none">• Policing System<ul style="list-style-type: none">○ Restore public order• Detention<ul style="list-style-type: none">○ Detain enemies• Judicial System<ul style="list-style-type: none">○ Try enemies in court○ Material○ Professional cooperation• Civil Law<ul style="list-style-type: none">○ Regulation of any aspect of civil life	<ul style="list-style-type: none">• Wartime Law<ul style="list-style-type: none">○ Protect intervention force• Human rights laws at all levels• Governance<ul style="list-style-type: none">○ Local political involvement○ Establish leaders○ Elections○ International authorization
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Table 15: Reorganized Objectives under Social Well-Being

<ul style="list-style-type: none">• Emergency Relief• International orgs and structures for ER<ul style="list-style-type: none">○ Follow money○ Assure money follows mandate○ Hold agencies to accountability• Water<ul style="list-style-type: none">○ Purification○ Delivery• Medical services<ul style="list-style-type: none">○ Immunization○ Preventative medicine• Minority needs<ul style="list-style-type: none">○ Needs of women○ Needs of children• Neighborhood watch	<ul style="list-style-type: none">• Food<ul style="list-style-type: none">○ Mobilize○ Distribute○ Transport• Successful ER ops<ul style="list-style-type: none">○ Applying best practices from successful ER ops○ Understand how unity of effort is Jointly forged between mil/civ orgs• Human Rights<ul style="list-style-type: none">○ Human Rights accountability○ Human rights monitoring teams○ Investigate abuses○ Teach○ Disseminate
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Table 16: Reorganized Objectives under Security

<ul style="list-style-type: none"> • Separate insurgents from civilian population <ul style="list-style-type: none"> ○ Clear and hold area ○ Erect fortified lines ○ Impassable barriers • Clearing and holding areas <ul style="list-style-type: none"> ○ Saturating with troops ○ Policing units ○ Reliable communication ○ Sanctions on insurgent helpers • Fortified lines and Impassible barriers <ul style="list-style-type: none"> ○ Blockhouse barriers and barbed wire ○ Electrified fence ○ Minefields ○ Watchtowers • Civilian resettlement • Military tactics to do least damage to society and keep casualties low <ul style="list-style-type: none"> ○ More troops ○ Secure government base areas • Rectitude 	<ul style="list-style-type: none"> • Disrupt Insurgents <ul style="list-style-type: none"> ○ Close sanctuaries used by insurgents ○ Impede outside aid to insurgents • Intelligence <ul style="list-style-type: none"> ○ Construct intelligence service • Movement of troops and supplies • Non-Violent Action <ul style="list-style-type: none"> ○ Amnesty ○ Publicize criminal acts done by insurgent leaders ○ Resettlement programs for long-time insurgents taking amnesty ○ Pay cash or release prisoners for guns • Separate insurgency from leaders <ul style="list-style-type: none"> ○ Reforms ○ Ethnic divide and conquer • Security for civilians <ul style="list-style-type: none"> ○ Village militias ○ Small group of regular army in charge of defense
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Table 17: Reorganized Objectives under Economy

<ul style="list-style-type: none"> • Rehab and development • Self-reliance • Economic opportunity 	<ul style="list-style-type: none"> • Socialist to market economies • Economic intervention
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The objectives now are clustered in affinity groupings. Each of the objectives is grouped according to its underlying value through the use of the WITI test. Duplicate objectives are combined. First affinity groupings represent the first groupings of SME objectives per Directive 3000.05 fundamental objective. Second affinity groupings, if needed, represent further deconstruction of SME objectives. Tables 18 through 23 show

the evolution of Manwaring and Joes' sub-objectives to supplement the initial 3000.05 value hierarchy. These sub-objectives will be combined with other Silver Standard stability sub-objectives via affinity grouping in section 3.3.4 to provide the final sub-objectives for each of the fundamental objectives in the Directive 3000.05 value hierarchy.

Table 18: First Affinity Grouping of Rule of Law

<ul style="list-style-type: none"> • Restore Public Order <ul style="list-style-type: none"> ○ Policing System ○ Detention ○ Judicial System ○ Civil Law • Wartime Law <ul style="list-style-type: none"> ○ Protect intervention force 	<ul style="list-style-type: none"> • Human rights laws at all levels • Governance <ul style="list-style-type: none"> ○ Local political involvement ○ Establish leaders ○ Elections ○ International authorization
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Table 19: Second Affinity Grouping of Rule of Law

<ul style="list-style-type: none"> • Restore Public Order <ul style="list-style-type: none"> ○ Policing System ○ Detention ○ Judicial System ○ Law <ul style="list-style-type: none"> ▪ Civil ▪ Wartime ▪ Human Rights 	<ul style="list-style-type: none"> • Governance <ul style="list-style-type: none"> ○ Local political involvement ○ Establish leaders ○ Elections ○ International authorization
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Table 20: First Affinity Grouping of Security

<ul style="list-style-type: none">• Physical Isolation of Insurgents<ul style="list-style-type: none">○ Separate insurgents from civilian population○ Clearing and holding areas○ Fortified lines and Impassible barriers○ Separate insurgency from leaders• Military tactics to do least damage to society and keep casualties low<ul style="list-style-type: none">○ More troops○ Secure government base areas○ Security for civilians○ Construct intelligence service○ Safe movement of troops and supplies	<ul style="list-style-type: none">• Non-Violent Action<ul style="list-style-type: none">○ Amnesty○ Publicize criminal acts done by insurgent leaders○ Resettlement programs for long-time insurgents taking amnesty○ Pay cash or release prisoners for guns• Disrupt Insurgents<ul style="list-style-type: none">○ Close sanctuaries used by insurgents○ Impede outside aid to insurgents
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Table 21: Second Affinity Grouping of Security

<ul style="list-style-type: none">• Security vs. Insurgents<ul style="list-style-type: none">○ Physical Isolation of Insurgents○ Disrupt Insurgents• Non-Violent Action<ul style="list-style-type: none">○ Amnesty○ Publicize criminal acts done by insurgent leaders○ Resettlement programs for long-time insurgents taking amnesty○ Pay cash or release prisoners for guns	<ul style="list-style-type: none">• Military tactics to do least damage to society and keep casualties low<ul style="list-style-type: none">○ More troops○ Secure government base areas○ Security for civilians○ Construct intelligence service○ Safe movement of troops and supplies
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Table 22: First Affinity Grouping of Social Well-Being

<ul style="list-style-type: none"> • Funding <ul style="list-style-type: none"> ○ International orgs and structures for ER • Systems <ul style="list-style-type: none"> ○ Water ○ Medical services ○ Minority needs ○ Food ○ Transportation 	<ul style="list-style-type: none"> • Best Practices <ul style="list-style-type: none"> ○ Successful ER ops • Human Rights <ul style="list-style-type: none"> ○ Human Rights accountability ○ Human rights monitoring teams ○ Investigate abuses ○ Teach ○ Disseminate
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Table 23: First Affinity Grouping for Economy

<ul style="list-style-type: none"> • Rehab and development • Self-reliance • Economic opportunity 	<ul style="list-style-type: none"> • Socialist to market economies • Economic intervention
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The last affinity groupings shown for each of Directive 3000.05’s fundamental objectives are the objectives and sub-objectives related to their representative branch in the combined value hierarchy. These will be combined with the other Silver Standard stability objectives from Section 3.3.2 and deconstructed similarly to provide the sub-objectives for the enhanced Directive 3000.05 stability value hierarchy, shown in Section 3.3.4 entitled Enhanced Directive 3000.05 Stability Value Hierarchy.

3.3.2 Other Silver Standard Sources

Orr outlines four fundamental objectives in his book: Security, Governance, Social and Economic Well-Being, and Justice and Reconciliation. Orr combines objectives Humanitarian Aid, Social Well-Being and Economy together in one fundamental objective. On the whole, Orr’s fundamental objectives align with the fundamental objectives from Directive 3000.05. In addition, due to the minimal overlap of objectives and values, the Orr offers the clearest delineation between the sub-

objectives for each of the fundamental objectives. The complete deconstruction of the set of values and objectives is in Appendix D.

Covey also outlines four fundamental objectives: Politics (Governance), Defeating Military Extremists (Security), Rule of Law, and Economy. Each fundamental objective is defined by a chapter. One issue with the development of his fundamental objectives is the sub-objectives and values overlap throughout the chapters making it difficult to delineate which fundamental objective they address. For example, prisons are sub-objectives of Rule of Law, and detention facilities are sub-objectives of Security. Additionally, there are several means objectives throughout each sub-objective list. The description of the Economy contains several sub-objectives that seem to be more related to Humanitarian Aid and Social Well-Being. The deconstruction and reorganization of these objectives is outlined in Appendix E.

3.3.3 Other Gold Standard Sources

Two other Gold Standard documents showing SOPS objectives are:

- DoS Post-Conflict Reconstructions Essentials Tasks Matrix (DPCRETM)
- Coalition Provisional Authority (CPA)

These two documents are currently being used for SOPS planning and prioritization. Although these two documents were not developed using VFT, they provide a good comparison to support and validate the SOPS values and sub-objectives identified so far.

DoS PCRETM is a living document, initially based on Orr, however, the list of tasks is constantly increasing. The tasks are listed under 5 broad headings: Security, Governance and Participation, Humanitarian Assistance and Social Well-being, Economic Stabilization and Infrastructure, and Justice and Reconciliation. It is easy to

see that these headings are essentially the same as the five fundamental objectives from DoD Directive 3000.05. Under each of these headings in the matrix are several sub-headings which may be viewed as sub-objectives. Under each of the sub-headings are tasks organized into three groups: initial response, transformation, and fostering sustainability. Including the tasks with the objectives causes several issues: they are mostly means objectives, the same tasks appear under multiple headings, and there are well over 1000 of them.

The CPA model has four fundamental objectives (Pillars): Governance, Economy, Security, and Essential Services (Social Well-Being). These objectives follow four of the five fundamental objectives from Directive 3000.05. The Rule of Law is missing. Sub-objectives identified earlier as belonging to Rule of Law are scattered throughout Governance, Security, and Essential Services. There are also a number of means objectives in the documentation. The CPA documentation is specific to Iraq. Hierarchies formed from the objectives and sub-objectives of these two Gold Standard materials are shown in Appendix H.

3.3.4 Enhanced Directive 3000.05 Stability Value Hierarchy

Objectives were obtained from the Silver and Gold Standard materials to support the initial Directive 3000.05 value hierarchy. The preceding sections show SOPS objectives that are valued by each SME. As shown, the objectives are all different in form and, likewise, different in the degree to which each sub-objective is deconstructed. The research combines all of the objectives and sub-objectives of the SME Gold and Silver Standard documentation. Affinity groups are used to establish values to supplement the current Directive 3000.05 stability value hierarchy (currently 1 tier)

allowing the creation of more robust value hierarchy. As noted in Chapter 2, good value hierarchies should be complete, non-redundant, operable, small in size and decomposable (Keeney 1992, Kirkwood 1997).

The process to determine each of the Directive 3000.05 stability VH follows. First, a fundamental objective of stability is chosen to develop sub-objectives. The second affinity groupings from each Silver Standard for that particular branch (Sections 3.3.1 and 3.3.2) are then listed. The objectives are then deconstructed via the WITI test. The objectives are further refined and become the lower tiers of the Directive 3000.05 stability VH. A new fundamental objective of stability is chosen, and the process is repeated.

The first objective examined is Security. Tables 24 through 26 list the initial Security objectives and sub-objectives from the second affinity groupings of the Silver Standard documents.

Table 24: Orr Security Objectives and Sub-objectives

<ul style="list-style-type: none">• Public safety<ul style="list-style-type: none">○ Freedom from violence and coercion○ Operating of schools○ Conducting of business• Cease-fires	<ul style="list-style-type: none">• Military Strength<ul style="list-style-type: none">○ Rebuilding of military○ Security Forces Capability○ Unity of effort• Dealing with Enemies<ul style="list-style-type: none">○ DDR○ Criminal Enterprise
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Table 25: Manwaring Security Objectives and Sub-objectives

<ul style="list-style-type: none"> • Security vs. Insurgents <ul style="list-style-type: none"> ○ Physical Isolation of Insurgents ○ Disruption of Insurgents • Non-Violent Action <ul style="list-style-type: none"> ○ Amnesty ○ Publication of criminal acts done by insurgent leaders ○ Resettlement programs for long-time insurgents taking amnesty ○ Payment of cash or release prisoners for guns 	<ul style="list-style-type: none"> • Military tactics to do least damage to society and keep casualties low <ul style="list-style-type: none"> ○ More troops ○ Security for government base areas ○ Security for civilians ○ Construction of intelligence service ○ Safe movement of troops and supplies
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Table 26: Covey Security Objectives and Sub-objectives

<ul style="list-style-type: none"> • Public Safety <ul style="list-style-type: none"> ○ Demining ○ Protection of Movement ○ Refugee/IDP security • Minimizing Extremist Threat <ul style="list-style-type: none"> ○ Minimization of Fighting ○ Demobilization ○ Disarmament 	<ul style="list-style-type: none"> • Territory Security <ul style="list-style-type: none"> ○ Violence across boundaries of state ○ Border Monitoring • Military Presence <ul style="list-style-type: none"> ○ Maximizing multinational strength ○ Joint mil-police command and control ○ Allied Security and Participation
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The objectives are combined and then deconstructed using the WITI test. Table 27 shows the process of decomposition within parentheses. In the case of Public Safety, the sub-objectives all can be categorized under values Freedom of Movement and Freedom from Violence. However, the two are opposite sides of the same value. For example, to limit violence allows greater freedom of movement, and the freedom of movement is minimal when violence is high. In addition, the remainder of sub-objectives is methods of achieving either value, or alternatives. Therefore, the decomposition leads to Public

Safety being defined as freedom of movement without violence and incorporates the sub-objectives that are alternatives.

Table 27: Combined Silver Standard Security Objectives and Sub-objectives

<ul style="list-style-type: none"> • Public Safety (following sub-objectives incorporated into Public Safety sub-objective) <ul style="list-style-type: none"> ○ Demining ○ Protection of Movement ○ Refugee/IDP Security ○ Freedom from Violence and Coercion ○ Operate Schools ○ Conduct Business • Maximizing multinational strength • Joint mil-police command and control • Allied Security and Participation • Military tactics to do least damage to society and keep casualties low <ul style="list-style-type: none"> ○ More troops ○ Secure government base areas ○ Security for civilians (remove—divided into Freedoms from Violence and of Movement) ○ Construct intelligence service ○ Safe movement of troops and supplies • Military Strength (rename—Military) <ul style="list-style-type: none"> ○ Rebuild military (change—decompose into Personnel and Infrastructure) ○ Security Forces Capability (remove—many of these objectives are accounted for in Law Enforcement Capability and DDR) ○ Unity of effort • Minimize Fighting (remove—product of DDR) • Demobilization (combine—Demobilization and Disarmament are two physical ways to reduce extremist threat; combination of both avoids preferential dependence issues) • Disarmament(combine—Demobilization and Disarmament are two physical ways to reduce extremist threat; combination of both avoids preferential dependence issues) • Reintegration • Physical Isolation of Insurgents (combine—Defeat Extremist/Militant Threat) • Disrupt Insurgents (combine—Defeat Extremist/Militant Threat) • Non-Violent Action (incorporated into Defeat Extremist/Militant Threats) <ul style="list-style-type: none"> ○ Amnesty ○ Publicize criminal acts done by insurgent leaders ○ Resettlement programs for long-time insurgents taking amnesty ○ Pay cash or release prisoners for guns • Cease Fires (removed due to being an alternative) • DDR (removed due to duplication) • Criminal Enterprise (removed due to counting in Economy) • Territory Security <ul style="list-style-type: none"> ○ Violence across boundaries of state ○ Border Monitoring
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Finally, the sub-objectives are grouped by higher objectives (Table 28). These sub-objectives are the second and third tiers of the Security branch.

Table 28: Security Objectives and Sub-objectives for Directive 3000.05 Security Branch

- | |
|---|
| <ul style="list-style-type: none"> • Defeat Extremist/Militant Threat <ul style="list-style-type: none"> ○ Demobilization and Disarmament ○ Reintegration ○ Territory Security • Military <ul style="list-style-type: none"> ○ Military Forces ○ Military Infrastructure ○ Unity of Effort • Public Safety |
|---|

The affinity grouping process is applied to the second affinity groupings of each of the SMEs to determine the Governance sub-objectives of each branch of the Directive 3000.05 stability VH. Tables 29 through 31 show the second affinity grouping for Governance objectives from each SME.

Table 29: Manwaring and Joes Governance Objectives and Sub-objectives

- | |
|--|
| <ul style="list-style-type: none"> • Local political involvement • Establish leaders • Elections • International authorization |
|--|

Table 30: Covey Governance Objectives and Sub-objectives

- | | |
|--|---|
| <ul style="list-style-type: none"> • Capabilities <ul style="list-style-type: none"> ○ Civil Administration ○ Democracy ○ Autonomy • Representing Government <ul style="list-style-type: none"> ○ Gain consent of the governed ○ Non-violence | <ul style="list-style-type: none"> • Participation in Government <ul style="list-style-type: none"> ○ Elections • Government Infrastructure <ul style="list-style-type: none"> ○ Municipal and regional administrative structures |
|--|---|

Table 31: Orr Governance Objectives and Sub-objectives

- Process for constituting legitimate government
 - National dialogue
 - Constitutional convention
 - Writing constitution
- Enhancing government capacities
 - Strengthening institutions
 - Executive and legislative
 - Transitional government
 - Governmental Duties
 - Act on citizens' views
 - Design political orders
 - Tax systems
 - Negotiate settlements
 - Pass legislation
 - Addressing corruption
 - Civil administration
 - State and local officials
 - Civil service training
- Ensuring participation (Enable citizens to be heard)
 - Elections
 - Political parties
- Civil society

The Governance objectives and sub-objectives are combined and then deconstructed using the WITI test. Table 32 shows the process of decomposition. Specific changes to sub-objectives are notated in parentheses.

Table 32: Combined Silver Standard Governance Objectives and Sub-objectives

<ul style="list-style-type: none"> • Process for constituting legitimate government <ul style="list-style-type: none"> ○ National dialogue ○ Constitutional convention ○ Writing constitution • Enhancing government capacities <ul style="list-style-type: none"> ○ Strengthening institutions (remove—roll-up from lower sub-objective Trans Govt) <ul style="list-style-type: none"> ▪ Executive and legislative (remove—inherent to Government Duties and Civil Service Training) ▪ Transitional government ○ Governmental Duties <ul style="list-style-type: none"> ▪ Act on citizens’ views (remove—inherent to duties) ▪ Design political orders ▪ Tax systems ▪ Negotiate settlements ▪ Pass legislation ▪ Addressing corruption (moved to Judicial function) ○ Civil administration <ul style="list-style-type: none"> ▪ State and local officials ▪ Civil service training • Ensuring participation (Enable citizens to be heard) <ul style="list-style-type: none"> ○ Elections ○ Political parties ○ Civil society • Local political involvement (remove—inherent to Civil Admin) • Establish leaders (remove—duplication) • Elections (remove—duplication) • International authorization (remove—inherent to Government) • Capabilities (remove—duplication of Duties) <ul style="list-style-type: none"> ○ Civil Administration (remove—duplication) ○ Democracy (remove—descriptor of Government) ○ Autonomy (remove—descriptor of Government) • Representing Government (remove—inherent to Civil Admin) <ul style="list-style-type: none"> ○ Gain consent of the governed (remove—inherent to Civil Admin) ○ Non-violence (remove—descriptor of Government) • Participation in Government (remove—duplication) <ul style="list-style-type: none"> ○ Elections (remove—duplication) • Government Infrastructure <ul style="list-style-type: none"> ○ Municipal and regional administrative structures
--

The Governance sub-objectives are grouped by higher objectives. Table 33 shows the Governance sub-objectives of lower tiers of the Governance branch in the Directive 3000.05 stability VH.

Table 33: Governance Objectives and Sub-objectives for Directive 3000.05 Governance Branch

- Constituting government (through National dialogue or Constitutional convention)
 - Writing constitution
- Government capabilities
 - Transitional government
 - Governmental duties
 - Executive duties
 - Design political orders
 - Negotiate settlements
 - Legislative Duties
 - Tax systems
 - Pass legislation
 - Civil administration
 - State and local officials
 - Civil service training
 - Administrative Structures
- Ensuring participation (Enable citizens to be heard)
 - Elections
 - Political parties
 - Civil society

The affinity grouping process is repeated on the second affinity groupings of the Silver Standard materials to determine the sub-objectives of the Economy branch of the Directive 3000.05 stability VH. Tables 34 through 36 show the second affinity grouping for Governance objectives from each SME.

Table 34: Orr Economy Objectives and Sub-objectives

- Economic Well-Being
 - Basic macroeconomic needs
 - Managing natural resources
 - Market Economy
 - Engage private sector
 - International trade

Table 35: Manwaring and Joes Economy Objectives and Sub-objectives

- Rehab and development
- Self-reliance
- Economic opportunity
- Socialist to market economies
- Economic intervention

Table 36: Covey Economy Objectives and Sub-objectives

- Economic Policy
- Economic Crime
 - Grey Economy
 - Black Economy
- Economic Reconstruction
- Macroeconomic fundamentals

The Economy objectives and sub-objectives are combined and then deconstructed using the WITI test. Table 37 shows the process of decomposition. Specific changes to sub-objectives are notated in parentheses.

Table 37: Combined Silver Standard Economy Objectives and Sub-objectives

- Economic Well-Being (remove—incorporated into definition of Economy objective)
 - Basic macroeconomic needs
 - Managing natural resources (remove—inherent to Market Economy)
 - Market Economy
 - Engage private sector
 - International trade
- Rehab and development (combined—Economic Development)
- Self-reliance (remove—inherent to Market Economy)
- Economic opportunity (remove—inherent to Market Economy)
- Socialist to market economies (remove—inherent to Market Economy)
- Economic intervention
- Economic Policy
- Economic Crime
 - Grey Economy
 - Black Economy
- Economic Reconstruction (combined—Economic Development)
- Macroeconomic fundamentals (remove—duplicate)

The Economy sub-objectives are grouped by higher objectives. Table 38 shows the Economy sub-objectives of lower tiers of the Economy branch in the Directive 3000.05 stability VH.

Table 38: Economy Objectives and Sub-objectives for Directive 3000.05 Governance Branch

- Economic Crime
 - Grey Economy
 - Black Economy
- Economic Development
 - Economic Policy
 - Market Economy
 - International Trade
 - Private Sector
 - Macroeconomic Fundamentals
- Economic Intervention

The affinity grouping process is again applied to the second affinity groupings of the Silver Standard materials to determine the sub-objectives of the Social Well-Being branch of the Directive 3000.05 stability VH. Tables 39 through 41 show the second affinity grouping for Governance objectives from each SME.

Table 39: Orr Social Well-Being Objectives and Sub-objectives

- Social Well-Being
 - Basic education services
 - Medical Care

Table 40: Manwaring and Joes Social Well-Being Objectives and Sub-objectives

- | | |
|---|---|
| <ul style="list-style-type: none"> • Funding <ul style="list-style-type: none"> ○ International orgs and structures for ER • Systems <ul style="list-style-type: none"> ○ Water ○ Medical services ○ Minority needs ○ Food ○ Transportation | <ul style="list-style-type: none"> • Best Practices <ul style="list-style-type: none"> ○ Successful ER ops • Human Rights <ul style="list-style-type: none"> ○ Human Rights accountability ○ Human rights monitoring teams ○ Investigate abuses ○ Teach ○ Disseminate |
|---|---|

Table 41: Covey Social Well-Being Objectives and Sub-Objectives

<ul style="list-style-type: none">• Humanitarian Aid• Emergency Professionals<ul style="list-style-type: none">○ Teachers○ Doctors• Essential Services<ul style="list-style-type: none">○ Utilities○ Transportation	<ul style="list-style-type: none">• Rights of Minorities<ul style="list-style-type: none">○ Return of refugees and internally displaced persons (IDP)○ Security of minorities
---	--

The Social Well-Being objectives and sub-objectives are combined and then deconstructed using the WITI test. Table 42 shows the process of decomposition. Specific changes to sub-objectives are notated in parentheses.

Table 42: Combined Silver Standard Social Well-Being Objectives and Sub-objectives

- Social Well-Being
 - Basic education services (merged into Education)
 - Medical Care (merged into Medical)
- Funding (moved into Economic Intervention)
 - International orgs and structures for ER
- Systems
 - Water
 - Medical services (merged into Medical)
 - Minority needs (incorporated into appropriate Social Well-being sub-objectives)
 - Food
 - Transportation (removed—duplicate)
- Best Practices (assumed incorporated into appropriate Emergency Response objectives)
 - Successful ER ops (removed—inherent end state of ER ops)
- Human Rights (Human Rights Law incorporated into Legislative Duties objective, all other Human Rights sub-objectives assumed incorporated in appropriate personnel sub-objectives)
 - Human Rights accountability (incorporated—see above)
 - Human rights monitoring teams (incorporated—see above)
 - Investigate abuses (incorporated—see above)
 - Teach (incorporated—see above)
 - Disseminate (incorporated—see above)
- Humanitarian Aid (incorporated into definition of Relieving Suffering)
- Emergency Professionals (merged into Education)
 - Teachers (merged into Education)
 - Doctors (merged into Medical)
- Essential Services
 - Utilities (divided into Power, Telecom, Waste Mgt from earlier VFT)
 - Transportation (merged into Utilities)
- Rights of Minorities (removed—sub-objectives moved to Security)
 - Return of refugees and internally displaced persons (IDP) (moved to Freedom from Violence)
 - Security of minorities (moved into Freedom from Violence)

The Social Well-Being sub-objectives are grouped by higher objectives. Table 43 shows the Social Well-Being sub-objectives of lower tiers of the Social Well-Being branch in the Directive 3000.05 stability VH.

Table 43: Objectives and Sub-objectives for Directive 3000.05 Social Well-Being Branch

- Relieving Suffering
 - Food
 - Shelter
 - Water
- Sustaining Life
 - Education
 - Medical
 - Utilities
 - Power
 - Public Transportation
 - Telecom
 - Waste Management
 - Water Supply

The affinity grouping process is repeated on the second affinity groupings of the Silver Standard materials to determine the sub-objectives of the Rule of Law branch of the Directive 3000.05 stability VH. Tables 44 through 46 show the second affinity grouping for Governance objectives from each SME.

Table 44: Covey Rule of Law Objectives and Sub-objectives

- Judicial System
 - Judicial Personnel
 - Body of Law
 - Judicial Infrastructure
- Law Enforcement
 - Police Personnel
 - Police Infrastructure
 - Police Capability
- Corrections
 - Corrections Personnel
 - Corrections Infrastructure
 - Corrections Management

Table 45: Orr Social Rule of Law Objectives and Sub-objectives

<ul style="list-style-type: none">• Judicial system<ul style="list-style-type: none">○ Law enforcement<ul style="list-style-type: none">▪ International police▪ Mentor indigenous police▪ Civilian authorities▪ Law enforcement training○ Emergency justice measures○ Judiciary System<ul style="list-style-type: none">▪ Courts▪ Legal experts<ul style="list-style-type: none">• Judges• Prosecutors• Defense attorneys• Court admin• Legal Pros○ Corrections system○ Enforcement mechanisms<ul style="list-style-type: none">▪ Legal code▪ Monitoring▪ Body of law• Human rights mechanisms and Reconciliation mechanisms<ul style="list-style-type: none">○ Human rights training○ International courts/tribunals○ Truth commissions○ Past abuses• Resolving grievances
--

Table 46: Manwaring and Joes Rule of Law Objectives and Sub-objectives

<ul style="list-style-type: none">• Restore Public Order<ul style="list-style-type: none">○ Policing System○ Detention○ Judicial System○ Law<ul style="list-style-type: none">▪ Civil▪ Wartime▪ Human Rights

The Rule of Law objectives and sub-objectives are combined and then deconstructed using the WITI test. Table 47 shows the process of decomposition. Specific changes to sub-objectives are notated in parentheses.

Table 47: Combined Silver Standard Rule of Law Objectives and Sub-objectives

- Law enforcement
 - International police (merged into Law Enforcement Personnel)
 - Mentor indigenous police (merged into Law Enforcement Personnel)
 - Civilian authorities (merged into Law Enforcement Personnel)
 - Law enforcement training (assumed accomplished through Law Enforcement Personnel)
- Emergency justice measures (merged with Judicial Capabilities)
- Judiciary System
 - Courts (merged with Judicial Infrastructure)
 - Legal experts (merged with all sub-objectives into Judicial Personnel)
 - Judges (see above)
 - Prosecutors (see above)
 - Defense attorneys (see above)
 - Court admin (see above)
 - Legal Pros (see above)
- Corrections system (WITI test shows value is Corrections Capability)
- Enforcement mechanisms
 - Legal code (moved to Legislative Duties)
 - Monitoring (incorporated into Judicial System)
 - Body of law (moved to Legislative Duties)
- Human rights mechanisms and Reconciliation mechanisms (merged with Reconciliation Mechanisms along with sub-objectives)
 - Human rights training (assumed integrated with personnel objectives)
 - International courts/tribunals
 - Truth commissions
 - Past abuses
- Resolving grievances (reason for Reconciliation Mechanisms sub-objective)
- Restore Public Order
 - Policing System (merged with Law Enforcement)
 - Detention (merged with Corrections Capability)
 - Judicial System (remove—duplicate)
 - Law (moved to Legislative Duties along with all sub-objectives)
 - Civil
 - Wartime
 - Human Rights
- Judicial System (WITI test shows value is Judicial Capability)
 - Judicial Personnel
 - Body of Law (moved to Legislative Duties)
 - Judicial Infrastructure
- Law Enforcement (WITI test shows value is Law Enforcement Capability)
 - Police Personnel (Change Police to Law Enforcement)
 - Police Infrastructure (Change Police to Law Enforcement)
 - Police Capability (remove—duplicate)
- Corrections (remove—duplicate)
 - Corrections Personnel
 - Corrections Infrastructure
 - Corrections Management (merged with Corrections Capability)

The Rule of Law sub-objectives are grouped by higher objectives. Table 48 shows the Rule of Law sub-objectives of lower tiers of the Rule of Law branch in the Directive 3000.05 stability VH.

Table 48: Objectives and Sub-objectives for Directive 3000.05 Rule of Law Branch

- | |
|---|
| <ul style="list-style-type: none">• Corrections Capability<ul style="list-style-type: none">○ Corrections Infrastructure○ Corrections Personnel• Judicial Capability<ul style="list-style-type: none">○ Judicial Infrastructure○ Judicial Personnel• Law Enforcement Capability<ul style="list-style-type: none">○ Law Enforcement Infrastructure○ Law Enforcement Personnel• Reconciliation Mechanisms |
|---|

By combining values and objectives from the writings of several stability experts, DoS PCRETM, and DoD Directive 3000.05, this research captures all of the relevant values and objectives for a stable state developed from the literature. Again care was taken to ensure the combined hierarchy possesses all of the desirable characteristics of a value hierarchy. Completeness seems achieved since all of the Silver and Gold Standard objectives are included in the sub-objectives in the value hierarchy. Non-redundancy is shown by each sub-objective in each of the branches of the enhanced value hierarchy being different. Decomposability is assumed understanding that each of the branches of the value hierarchy should be able to be evaluated separately. Without identifying a decision maker, this thesis cannot verify preferential independence. The objectives were constructed to be preferentially independent; in addition, the additive value function has been proven to be robust to minor deviations in preferential independence (Merrick et al. 2005). Operability is assumed since the hierarchy is understood by the analyst. With a proxy DM, this characteristic cannot be determined. Smallness of size also appears to be

obtained. The combined value hierarchy contains 41 attributes - a very reasonable number of attributes for such a complex decision. The top tier consists of the five fundamental objectives from DoD Directive 3000.05. Figure 14 shows the entire DoD Directive 3000.05 stability value hierarchy. Figure 15 shows the top tier values of the combined model while Figures 16 through 20 shows the deconstruction of the sub-objectives for each branch.

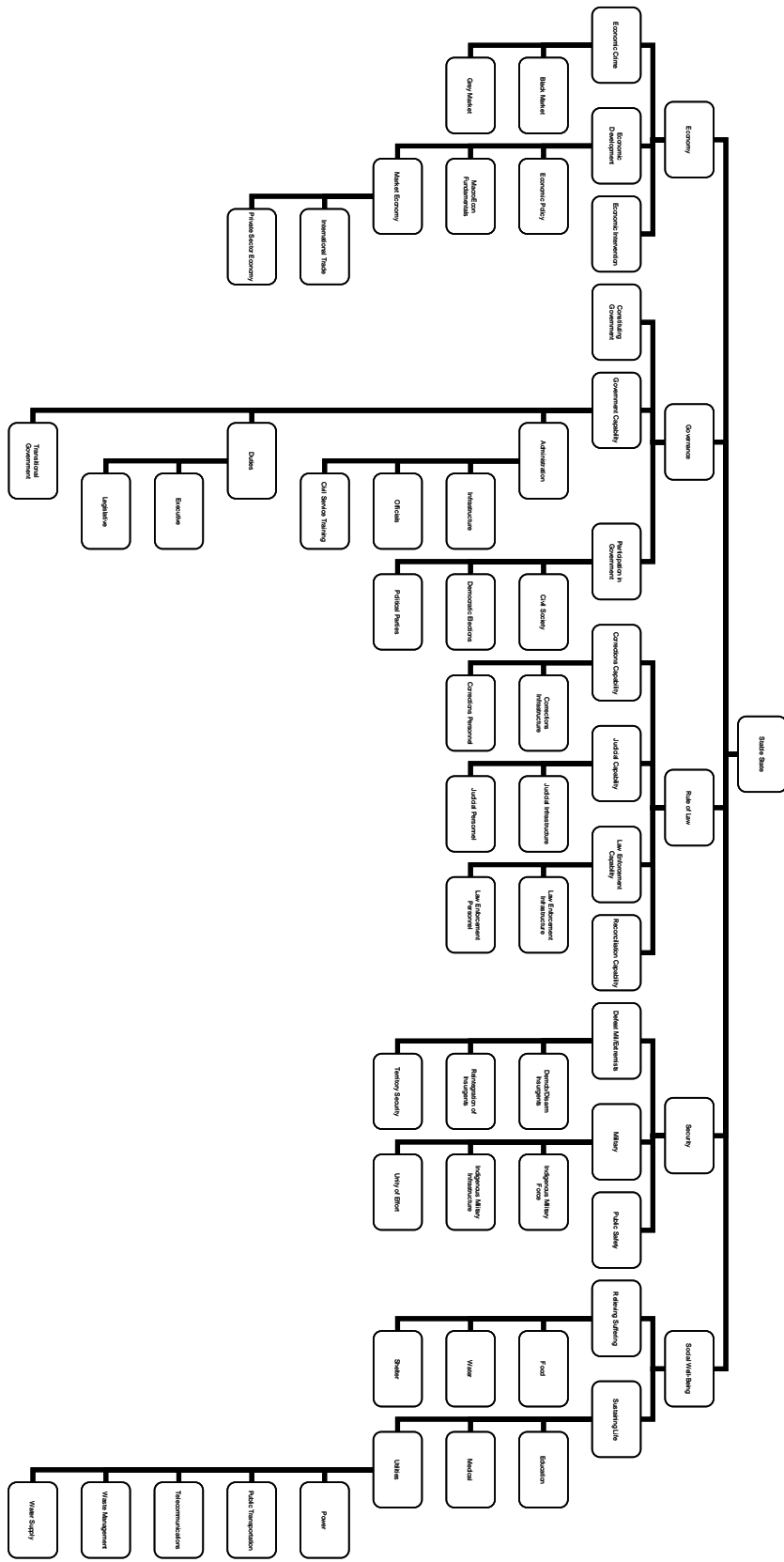


Figure 14: DoD Directive 3000.05 Stability Value Hierarchy

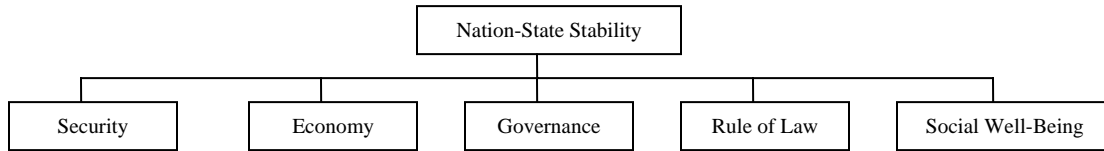


Figure 15: The Top Tier Values of the Directive 3000.05 Stability Value Hierarchy

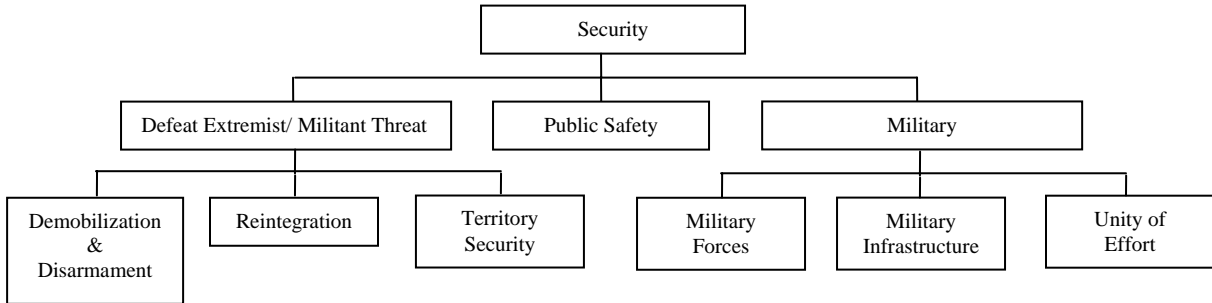


Figure 16: Security Sub-objectives of the Directive 3000.05 Stability Value Hierarchy

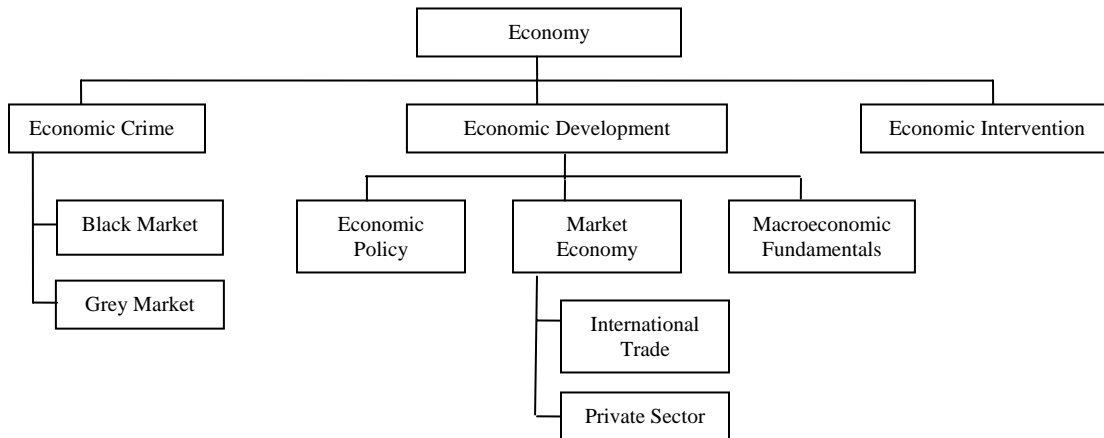


Figure 17: Economy Sub-objectives of the Directive 3000.05 Stability Value Hierarchy

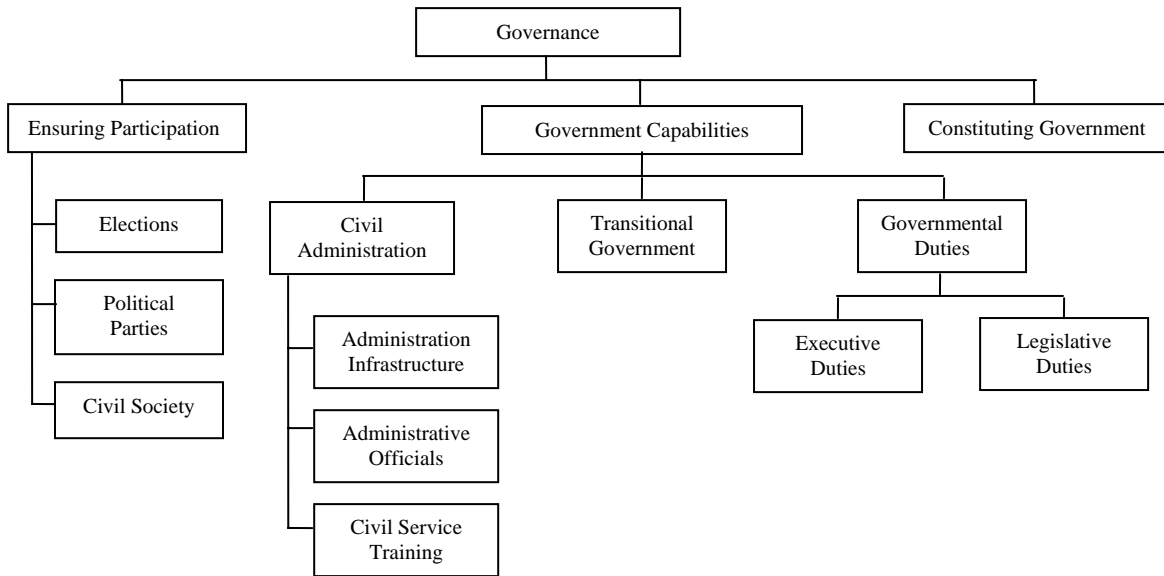


Figure 18: Governance Sub-objectives of the Directive 3000.05 Stability Value Hierarchy

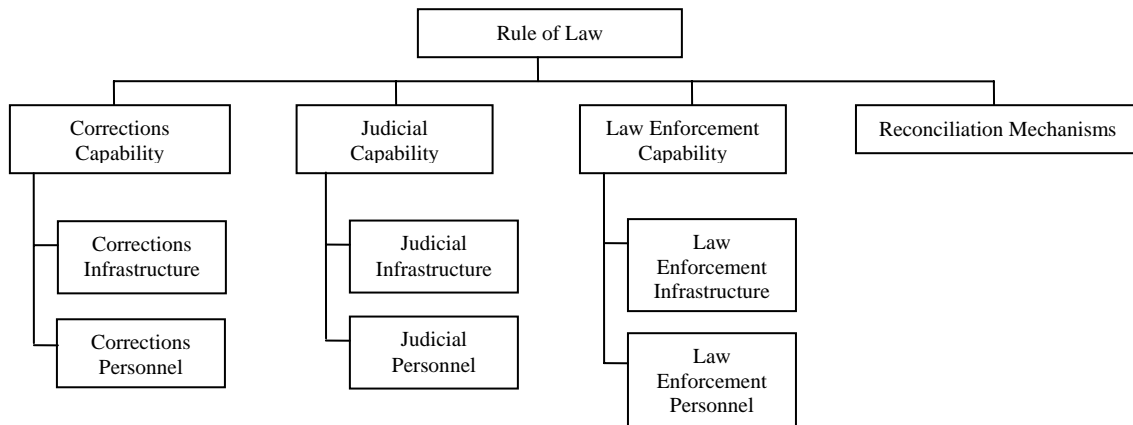


Figure 19: The Rule of Law Sub-objectives of the Directive 3000.05 Stability Value Hierarchy

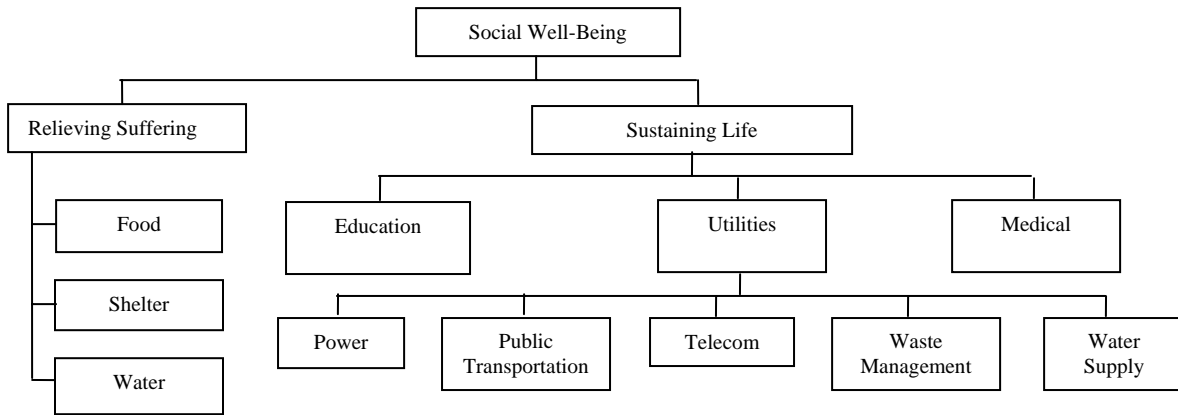


Figure 20: Social Well-Being Sub-objectives of the Directive 3000.05 Stability Value Hierarchy

Definitions for all objectives and sub-objectives for the Directive 3000.05 stability value hierarchy were developed by the sub-objective deconstruction. The definitions are shown in Appendix F.

3.4 Attributes and SDVFs

The VH requires attributes that can form single dimensional value functions (SDVF) to measure each of the lowest level sub-objectives in order to provide feedback on the achievement of each objective. Attributes, also known as measures, are used to measure the level of objective attainment for each sub-objective. The top tier of the model contains five fundamental objectives: Economy, Governance, Rule of Law, Security, and Social-Well Being. The fundamental objectives are repeatedly divided into sub-objectives until a measurable attribute can be determined. Attributes are assigned at the lowest sub-objective tier.

As previously mentioned in Chapter 2, attributes can be measured using one of four different types of scales: natural-direct, natural-proxy, constructed-direct, or constructed-proxy. Natural-direct is the most desirable type of scale and constructed-proxy the least; however, often it is not possible to find a natural-direct scale for an

attribute. In this case, one may choose from one of the other 3 combinations of attributes as described in Chapter 2. Likewise, these attribute scales are either monotonically increasing or decreasing. The rationale of the appropriateness of the different types of attributes was presented previously in section 2.4.3.

To make strategic decisions about SOPS, the DM will need high level evaluations of the attainment for each of the objectives. To continue dividing sub-objectives until a natural-direct measure is attained may cause the hierarchy to grow to an unacceptable size that is difficult to analyze and difficult for the DM to understand. This could also indicate that the attribute or objectives were poorly chosen as well. By using SMEs to assess the level of attainment on a constructed scale for each of the measurable attributes, often the hierarchy remains small and functional and can be calculated in a short amount of time. Ultimately, DMs and SMEs should have acceptance of attributes and their scales. If not new attributes and SVDFs should be constructed. Several examples of attributes for several sub-objectives of the Directive 3000.05 value hierarchy are described below in order to illustrate possible measures for use in evaluation of alternatives.

Economy according to the decomposition of Directive 3000.05 stability objectives is defined as a system made up of policy, macroeconomic fundamentals, free market, and international trade that exchanges wealth, goods, and resources mostly free of economic criminal activity. It is divided up into three second-tier sub-objectives: Economic Crime, Economic Development, and Economic Intervention. Economic Crime is further decomposed divided into Black Market and Grey Market.

Black market activities are defined as “illicit trade in goods or commodities in violation of official regulations” (Merriam-Webster 2006). Examples of black market activities are: money laundering, trafficking of weapons, drugs, and humans. Grey market activities are defined as illegally obtaining commodities that are generally considered legitimate (Covey et al. 2005). Examples of grey market activities are: avoidance of taxes, violation of regulations, smuggling, evasion of economic embargoes, currency manipulation, parallel importation, and exploitation of raw material resources. In order to measure these attributes, economic SMEs should be used for evaluation purposes as well as those involved in the justice sector.

An example of a possible attribute for Black Market may be the percentage of known money loss from Black Market activities in comparison to a nation’s GDP. This attribute is proposed since there are several activities that define the Black Market, but the objective is to measure the influence of these activities. Therefore, estimated money lost seems an appropriate attribute. The objective would be to minimize Black Market activities. An example of a notional SDVF for Black Market activity is presented next. Assume that the appropriate SMEs accept the range of 0 to 20% known money loss from black market compared to GDP as high value. However, assume that the general understanding is that Black Market will never be eliminated, so between 0% and 10% receives full value. In addition, assume that economists believe that there is a sharp value loss as the percentage approaches 20%. Assume again that they suggest that anything more than 50% is negligible value, which is assessed from one of the SMEs as “practically zero”. After discussing with the SMEs, an S-curve is presented to represent the SME’s values (Figure 21). It shows that as the known Black Market activity

increases between 0% and 10%, the value of the attribute slightly decreases, and from greater than 10% to 20% there is a more significant proportional decrease in value. From 20% to 100%, the value approaches 0 value. The ultimate acceptance of the SDVF comes from the DM and in this case the economy SMEs.

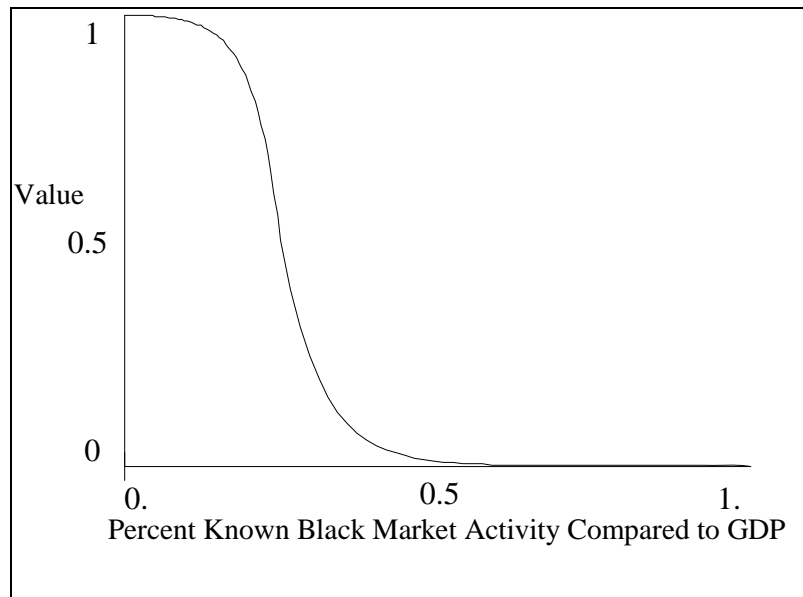


Figure 21: Notional SDVF for Black Market Attribute

Economic Intervention is the international community offering economic aid to revive the economy of a failed nation. The nature of economic intervention could likely be highly financial. Therefore, it may be appropriate to use money as an attribute—more specifically the difference of money obtained vs. the money believed needed by SMEs. This range could be determined by a SME who could estimate how much international aid money was required. It would then be a simple matter of comparing how much money was obtained for economic intervention to how much was needed. Assume that a SME determined the level of economic intervention to be \$20.9B. Over a specific period of time, 0% would be the worst possible value on the range of money obtained, therefore,

$v(0\%) = 0$. Likewise the best possible value on the range of money obtained would be 100%. Therefore, $v(100\%) = 1$. The range between the low and high values would be defined on a continuous scale. In conversing with the DM or SMEs assume that they consider 0% to 5% as negligible increase in value, and likewise 90% to 100% as negligible increase in value. If this is the case, it seems reasonable to approximate the SDVF with a S-curve function (Figure 21).

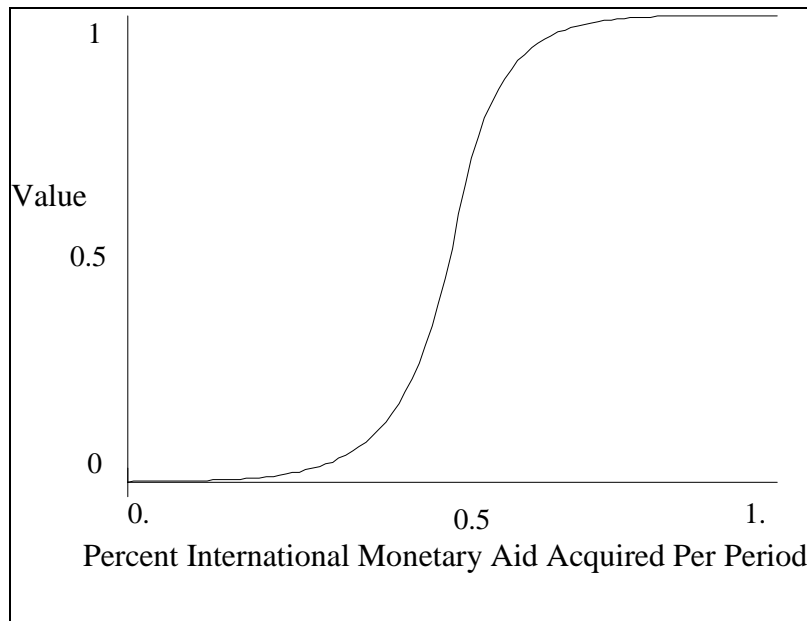


Figure 22: Notional SDVF for Economic Intervention

Establishment of the constitution is the attribute used to measure the sub-objective Constituting Government. Since the definition of Constituting Government is the process in which a national government is established either through national dialogues or constitutional conventions the measure would capture that activity. A product of a constitutional convention is hopefully a constitution document. It is assumed that having the constitution is more valuable than not, so the highest value and lowest value are assigned accordingly: $v(\text{established constitution}) = 1$ and $v(\text{no constitution}) = 0$. A

choice for the range of the scale between 0 and 1 now need to be determined. It could be argued that the scale take on continuous or discrete terms. Either is acceptable as long as it captures the change between values to the degree the DM or SME prefers. In this case, it seems that the value over the range could be discretely modeled by three bins. High is the level of the established constitution. Low is the level of no constitution. Medium could be defined by the constitution is being worked on in the national dialogue or constitutional convention. The value of this bin may be half of the value of an established constitution, or 0.3, because the process of making a constitution could be considered better than not having one, but also understanding that the process could falter and no constitution may be produced. Again, the DM or SME should approve of this value for the particular settings. A possible SDVF is defined in Figure 21.

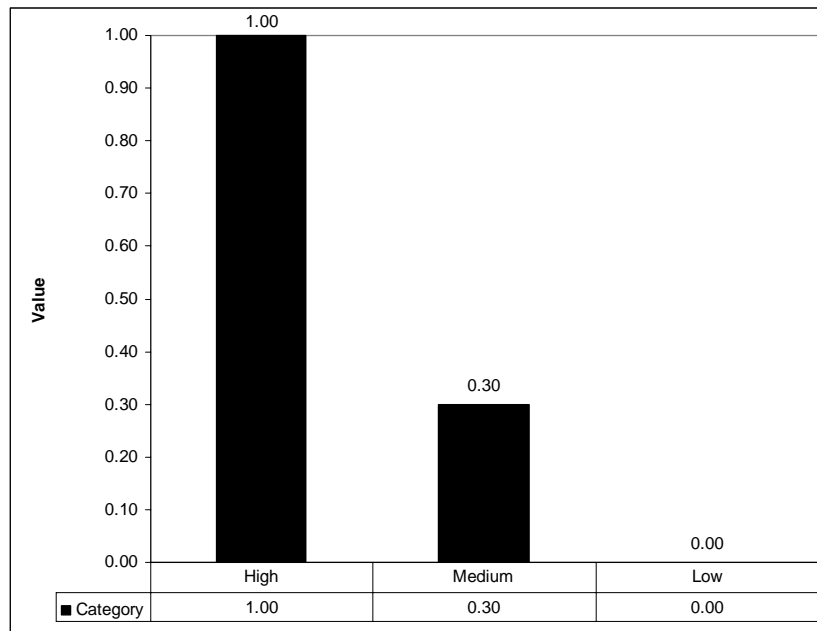


Figure 23: Notional SDVF of Establishment of Constitution

These examples of notional attributes and SDVFs are intended to convey an understanding of how to approach the creation of attributes and SDVFs for all 41 attributes in the Directive 3000.05 stability VH.

The combination of all the attributes to evaluate the attainment of a stable state is achieved through the additive value function (AVF). There are 41 attributes in the Directive 3000.05 stability value hierarchy denoted x_1, \dots, x_{41} . The additive value function is then defined as

$$v(x_1, \dots, x_{41}) = \sum_{i=1}^{41} k_i v_i(x_i)$$

where

$$\sum_{i=1}^{41} k_i = 1$$

where v_i is the value function over x_i and k_i is global weight of attribute x_i .

The establishment of the structure of the VH was demonstrated in Section 3.3. However, in order to use the VH, actual attributes and SDVFs must be accomplished. In Chapter 4, a notional illustration using the Directive 3000.05 stability VH to evaluate stability and prioritize SOPS courses of action (COA) is shown to illustrate functionality. An important objective of further research (Chapter 5) will be to develop specific attributes that measure the subobjectives so a high level decision maker can use SME input from all areas of SOPS for assessment. The SMEs use their respective knowledge and experience to score the sub-objectives and are not limited to one specific quantifiable measure to evaluate an area.

3.5 Weighting the VH

The weights are typically determined by the eliciting preferences from the DM through an interview process. For this research, Gold and Silver Standard documents were used to determine the SOPS values. Unfortunately, these documents provide little insight into the relative importance of any of these values in relation to each other. Regardless, before the value hierarchy can be used to score, weights must be determined.

Notional weights can be developed for Directive 3000.05 stability VH using the reviews of SOPS by Dobbins and DSB in Chapter 2. Dobbins points that there can be no economic progress without Security (Dobbins et al. 2003). Likewise, the DSB notes that issues with rebuilding Economy are highly dependent on having stable Governance (2004). Rule of Law is also noted to influence as well as be influenced by all first-tier fundamental objectives. Still it is difficult to distinguish between any of the first tier objectives; therefore, this research assumes that Security, as an enabler, is more important than Economy, and that Economy, Governance, Rule of Law, and Social Well-Being are equally important.

As noted in Chapter 2, Swing Weighting is the preferred method of determining weights and should be performed from the bottom up. However, the use of published texts does not provide the level of detail required for swing weighting. For demonstration purposes and to provide a notional VH for the examples in Ch 4 this research develops notional weighting from the top down. The fundamental objective with the greatest weight is Security. The assumed importance is 1.5 times as much as the other top-tier objectives which are weighed equally. The weights are calculated as shown:

$$\begin{aligned}
w_E &= w_G = w_{RL} = w_{SWB} = x \\
w_S &= 1.5x \\
w_S + w_E + w_G + w_{RL} + w_{SWB} &= 1 \rightarrow \\
1.5x + x + x + x + x &= 1 \rightarrow \\
5.5x &= 1 \rightarrow \\
x &= 1/5.5 = 0.\overline{18} \rightarrow \\
w_S &= 0.\overline{27} & w_E &= 0.\overline{18} & w_G &= 0.\overline{18} \\
w_{RL} &= 0.\overline{18} & w_{SWB} &= 0.\overline{18}
\end{aligned}$$

For illustrative purposes the fundamental objectives, Economy, Governance, Rule of Law, and Social Well-Being all receive a local weight of $0.\overline{18}$. The weight for Security is $0.\overline{27}$. The majority of comparisons between local sub-objectives show equal importance. Therefore at each local tier, each of the sub-objectives receives equal weighting.

An example showing both equally important sub-objectives as well as a preference for one over the other is illustrated in the Economy branch. Economy has three sub-objectives: Economic Crime, Economic Development, and Economic Intervention. Economic Intervention and Development are viewed as equally important and twice as important as Economic Crime. Therefore Economic Crime receives a global weight of $0.0\overline{36}$ or $1/5^{th}$ of $0.\overline{18}$ and Economic Intervention and Development both receive a weight of $0.0\overline{72}$. Within Economic Development, each of the sub-objectives is equally important, so all receive a global weight of $0.0\overline{24}$. Figure 18 shows the notional global weights of the Economy branch. The notional global weights for the entire Directive 3000.05 stability VH are listed in Appendix G.

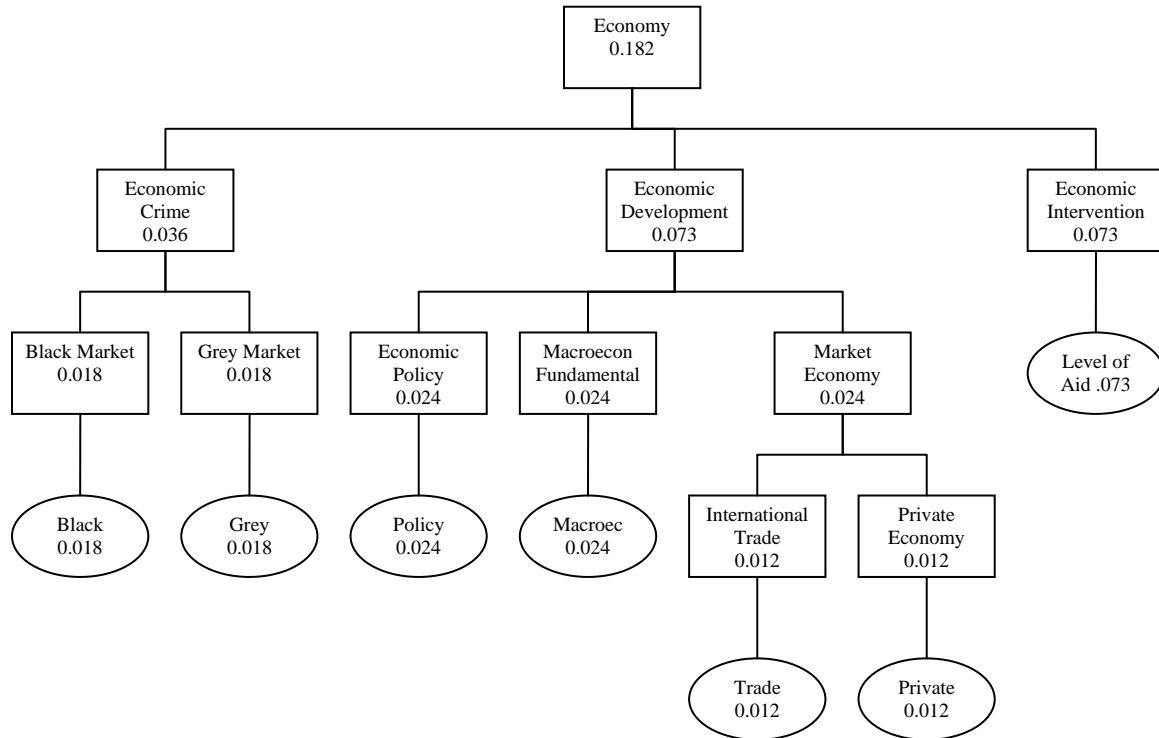


Figure 24: Economy Branch of VH Showing Notional Global Weights

3.6 Summary

Chapter 3 has shown the development of the Directive 3000.05 stability value hierarchy. First, the decision context and problem were established through Gold Standard documentation. Next objectives were created by deconstructing the values of the Gold and Silver Standard documentation. The five fundamental objectives were found to be Economy, Governance, Rule of Law, Security, and Social Well-Being. Sub-objectives were determined by combining affinity groupings of each Silver Standard to determine sub-objectives of each of the fundamental objectives from Directive 3000.05. At the lowest tier of the VH, examples of notional attributes and SDVFs were discussed for some of the sub-objectives to measure the level of achievement in those sub-objectives. Notional attribute scores will be used in Chapter 4 to illustrate the analysis

capabilities of using the VH to evaluate stability in a nation-state. The VH, if fully fleshed-out, should consist of at least 41 attributes—one for each of the lowest sub-objectives. Finally, a notional weighting scheme was created to show the global importance of the attributes evaluating stability.

4. Illustrative Analysis

4.1 Introduction

This chapter demonstrates the uses of the Directive 3000.05 stability value hierarchy developed in Chapter 3 by assessing progress in Nation-State stability and prioritizing future SOPS to improve the stability. First, the Directive 3000.05 stability VH is used to evaluate the evolution of stability of the fictional state of Badistan over a period of time from 2003 to 2005. The attributes will be notionally scored to illustrate functionality of the Directive 3000.05 stability value hierarchy. Next, the SOPS prioritization capabilities of the Directive 3000.05 stability value hierarchy will be illustrated by notionally evaluating various SOPS alternatives based on most valued improvement.

4.2 Illustration of Assessment of SOPS Using Fictional Country of Badistan

As stated in Chapter 3, assessment of SOPS is an element of the stability decision problem. Assessment is accomplished over time to score how well SOPS have moved a failed or failing state towards stability. After SOPS have been implemented to stabilize a country, an assessment of the SOPS can be obtained by using the Directive 3000.05 stability VH. Data would be gathered according to the established attributes in the VH. These attributes ultimately measure the level of obtainment of the five fundamental objectives of SOPS: Economy, Governance, Rule of Law, Security, and Social Well-Being. The VH uses the additive value function to produce an ordinal score for the stability in the nation-state. After an adequate period of time, the attributes can again be evaluated and stability scored. The scores are compiled over time and analyzed

for increasing or decreasing trends. This research uses the Directive 3000.05 stability VH to notionally score stability in Badistan to demonstrate this process.

This research uses notional resulting stability scores from the Directive 3000.05 stability value hierarchy. It is very important to note that the VH may contain several objectives that may not currently be evaluated or tracked. If so, this VH suggests possible intelligence requirements necessary to evaluate stability. In addition, the data available may not directly measure the attributes to the degree desired. Therefore, the use of the available data as proxy measures also may be needed for the attributes needed in the VH.

The availability of some data metrics may be interspersed between odd years. In order to accommodate missing data, appropriate data techniques may be used (Allison 2001; Roderick & Rubin 2002). If data can not be obtained due to the reasons that data will never be able to be obtained, the analyst may recommend that the VH be reevaluated and new attributes developed. If data has not been obtained but could be, a solution to this problem may be to issue an Intelligence requirement to obtain the data.

The attributes are notionally scored based on Badistan, 2003 and the most current available data from 2005.

Table 49: Notional Stability Scores for Badistan

Alternative	2003	2005
Score	0.238	0.362

Based on the notional scores (Table 49), it is clear that stability has improved from 2003 to 2005. It is important to note however, that the numerical values of stability in Badistan are ordinal providing only a ranking. In addition, the assumption that the score of 1 implies complete stability is also a flawed one. The score of 1 implies that all

attributes are completely fulfilled at the high level. However, this utopia or ideal point of achievement may be unobtainable and therefore not the best reference point for the success of stability. Stability may occur at a much lower, unknown value.

The evaluation shows that Badistan’s stability improved overall. It is important for the decision maker to know in which areas stability improved. Figure 23 shows improvements were made in Governance, Rule of Law, and Economy from 2003 to 2005 and that Security and Social Well-Being decreased over the same period of time. Overall, the changes across the five fundamental stability objectives led to an increase in stability from 2003 to 2005.

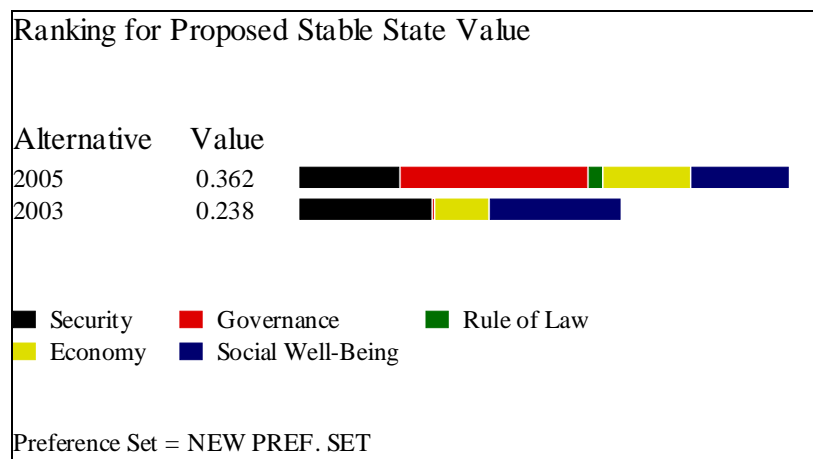


Figure 25: Ranking of Alternatives

If the DM is interested in more specific changes in attributes resulting in the stability score, the stacked bar chart shown in Figure 24 can be further divided to show which sub-objectives had the largest change from 2003 to 2005. This is shown in Figure 25.

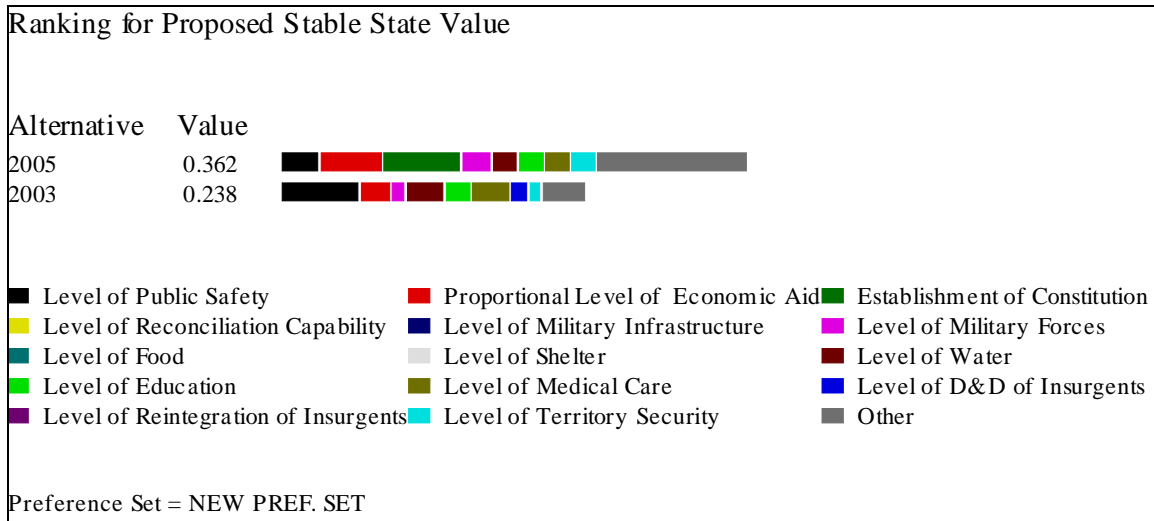


Figure 26: Stacked Bar Chart Showing Highest Sub-Objective Changes in Weight

These charts can be developed for any tier of the hierarchy.

4.3 Prioritization of SOPS Alternatives

In section 4.2, the Directive 3000.05 stability VH has was used to assess stability over a period of time. The VH can also be used to rank SOPS courses of action (COAs) based on their expected valued return.

The first step in COA evaluation is to predict how each COA will affect the scores of the attributes across the entire model. During this analysis, SMEs may recommend different combinations of SOPS COAs based on the need to strengthen certain attributes. The predicted outcome of each COA or portfolio of COAs based on SME assessment is then scored using the VH. A more analytical prediction would be preferred. The scores provide an ordinal ranking that can be used to prioritize the COAs. After the selected COAs have been implemented, the VH could be used to evaluate the stability, and the process could be repeated.

To illustrate this functionality, this research creates six types of SOPS COA portfolios to improve the stability of Iraq of 2005. The portfolios are: Economy-heavy,

Governance-heavy, Rule of Law-heavy, Security-heavy, and Social Well-Being-heavy. This research uses cross-referencing of tasks in the DPCRETM and the Silver Standard SME documentation to provide a notional prediction of how tasks affect the levels of attributes in general across the VH.

The first alternative is an Economy-heavy (EH) SOPS COA portfolio. It is expected to score high for most of the Economy attributes, but have little affect on the other four fundamental areas. The Silver Standard documents all state Economy is an important objective to stabilize a nation. However, none of them link the establishment of economy to improvements in the other four fundamental areas. Therefore, this illustration assumes any affect, positive or negative, in the other areas is minimal.

It is assumed that the EH portfolio would do little to improve the score for Black Market Activity as black market tradable goods are usually not of economic nature (drug running, human trafficking, etc). However, with an improved economy, it is assumed that Grey Market activity should be reduced as most grey market goods are desired when regular market items are overpriced.

Economic Policy, Macroeconomic Fundamentals, and International Trade can be increased but are often dependent upon improvements in government to be successful. Likewise, Private Sector Economy can be increased but it is assumed that success depends on the establishment of some of the other economic sub-objectives and Security. Therefore these Economy sub-objectives are assumed to be increased by only one level over the 2005 score. On the other hand, Economic Intervention is assumed to be increased to its highest level as it is due to influence from outside the nation-state. Increasing Economy could increase sub-objectives in other functional areas if they can

increase in value when money is applied to them. Therefore, it was assumed in the example that infrastructure would increase and many of the Social Well-Being sub-objectives would also increase. These attributes are assumed to only increase by one level. The remaining attributes are assumed to stay at their 2005 levels.

The second alternative is the Governance-heavy (GH) SOPS COA portfolio. The GH portfolio is to have high impact on the interaction of Governance objectives and sub-objectives, but low impact on the interaction of other fundamental objectives. This portfolio is expected to increase the levels of all Governance attributes one level higher than was presented in the 2005 assessment. Those attributes already at the max level will remain at the max level. The increase of Governance attributes is assumed to help establish much of the policy and lawmaking across the remaining sub-objectives. Additionally, it is assumed to streamline the distribution of resources and money for the benefit of the Social Well-Being attributes. Therefore Social Well-Being attributes that have a score of 0 will increase one level and attributes scoring higher than 0 in 2005 will remain at their 2005 score.

The third alternative is the Rule of Law-heavy (RLH) SOPS COA portfolio. This notional portfolio primarily increases the Rule of Law attributes. Most Rule of Law attributes measure the institutions and personnel involved in upholding the law. Therefore, the implementation of the RLH alternative is expected to affect Black and Grey Market Activity, and Civil Society as well as Security attributes such as Disarm/Demobilize Insurgents, Reintegration of Insurgents, Territory Security, and Public Safety. These attributes are expected to increase one level from their 2005 score. All other attributes will remain the same.

The fourth notional alternative is the Security-heavy (SH) SOPS COA portfolio. Black Market Activity is assumed to move to its lowest level (highest score). International Trade will increase one level under the assumption that other countries will be interested in trade relationships knowing that the region is free of security issues in the notional example. Security is assumed to have a similar affect on Private Sector Economy. Security is assumed to affect Governance in attributes related to personnel and infrastructure; therefore, these attributes will be increased by one level. Additionally, strong security is assumed in this example to increase the personnel in the Rule of Law attributes due to providing a sense of safety for those who work in that area. The Rule of Law personnel attributes will be increased one level. Likewise, since Security is an enabler, it will increase all Social Well-Being attributes with a score of 0 by one level. Finally, the Security attributes themselves will all be increased one level since it is assumed that this portfolio will not ensure total security.

The final illustrative alternative is the Social Well-Being-heavy (SWB) SOPS notional COA portfolio. Along with Security, the Social Well-Being attributes are usually an immediate need for the general populace. However, it is assumed that satisfying that need has little affect in the areas of Economy, Governance, Rule of Law, or Security. The Social Well-Being attributes are all increased by one level since it is assumed the portfolio will not address all of the need.

The notional resulting scores from the scoring of the attributes in the Directive 3000.05 stability VH follow in Table 50.

Table 50: Scores for Attribute Heavy Alternatives

Alternative	2005	EH	GH	RLH	SH	SWB
Score	0.362	0.438	0.420	0.462	0.478	0.398

The analysis of the scores in Table 52 indicates that the notional Security Heavy (SH) alternative yields the best notional improvement in the example. However, it is noted that the span of scores for the alternatives is only 0.08. Therefore, a sensitivity analysis of the weights is advised. The sensitivity analysis is shown in Figures 26 through 30. The sensitivity analysis shows the ranking of the SH portfolio as the best alternative is not sensitive to the weights used in the VH.

Economy currently has 0.182 as shown by the vertical red line. The graph in Figure 26 shows the SH alternative is best at this weight. The EH alternative does not become the top alternative until the weight for Economy increases to 0.322. Sensitivity analysis on Governance (Figure 27) indicates dominance of the SH alternative. Over the range of weights for Governance from 0 to .994, the SH alternative is always the first choice. When the weight for Governance ranges from .995 to 1.0, the SH, GH, and RLH alternatives all rank the same. A similar situation occurs for the weight of Rule of Law (Figure 28). When weight for Rule of Law ranges from .995 to 1.0, the SH and RLH rank the same. The sensitivity analysis on the Security weight (Figure 29) shows the current weight of 0.273. The SH alternative is the best alternative for the weight range 0.111 to 1.0. For weights below 0.111, the best alternative is the EH alternative. Currently, Social Well-Being (Figure 30) has a weight of 0.182. For weights greater than or equal to 0.423, the Social-Well Being (SWB) alternative would be the best alternative to improve stability.

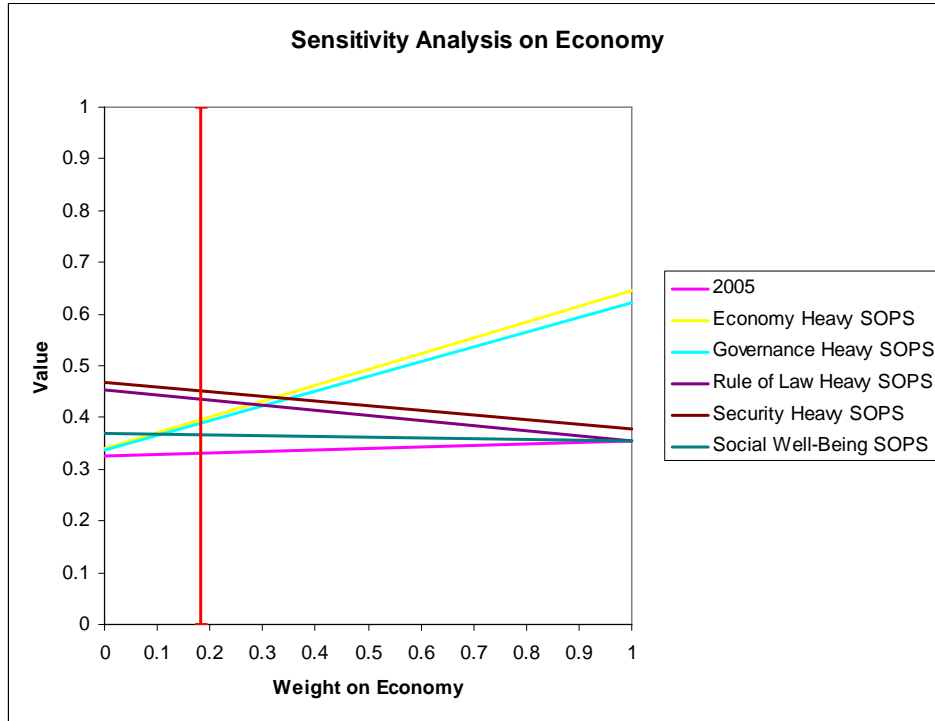


Figure 27: Sensitivity Analysis of Economy

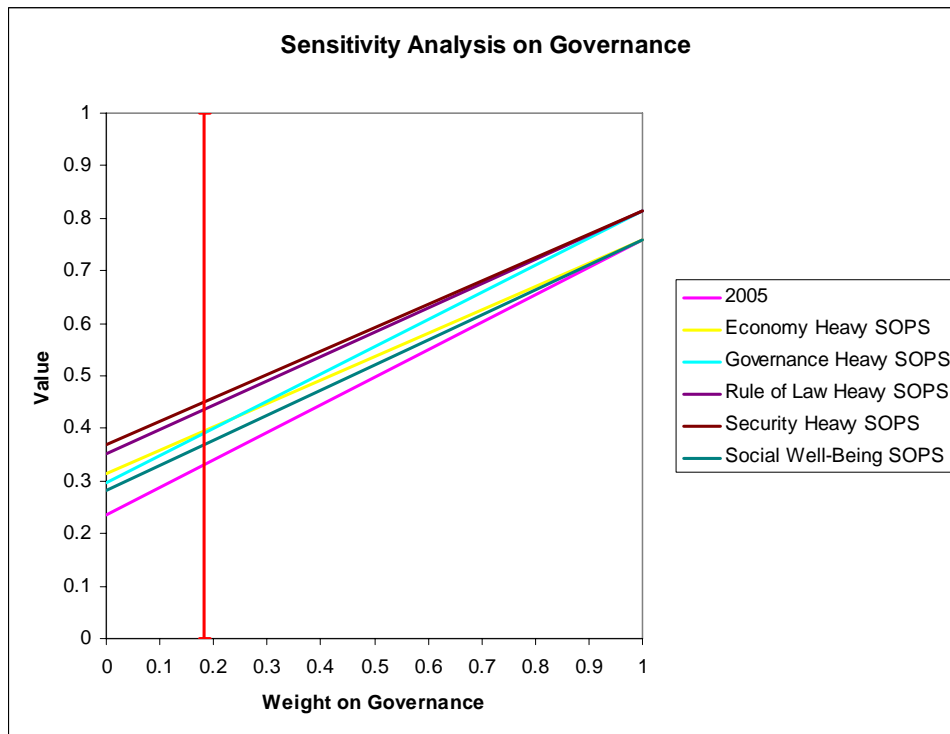


Figure 28: Sensitivity Analysis on Governance

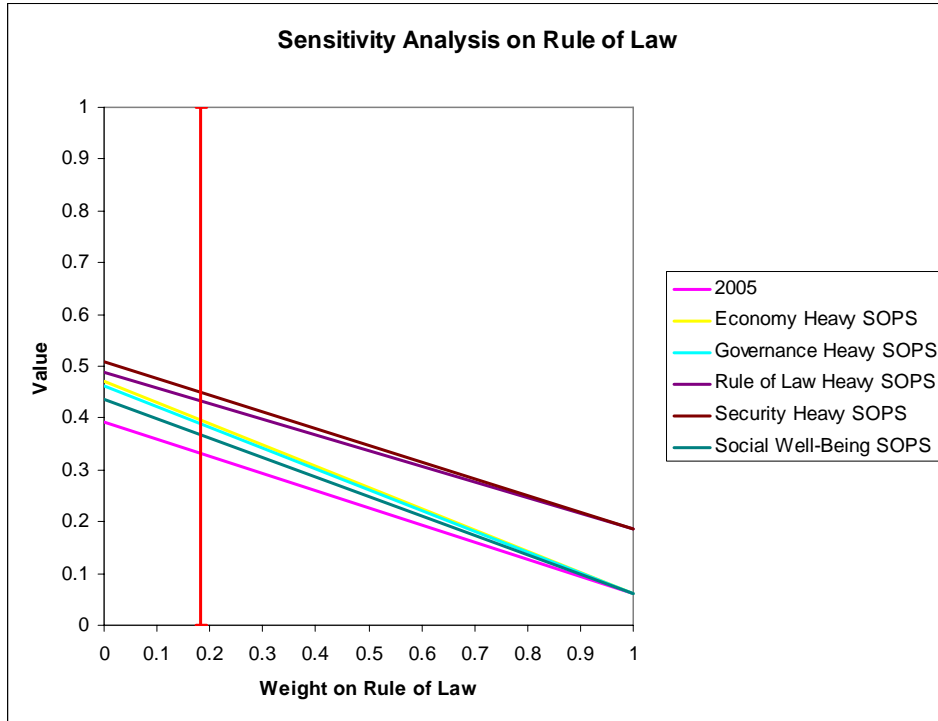


Figure 29: Sensitivity Analysis on Rule of Law

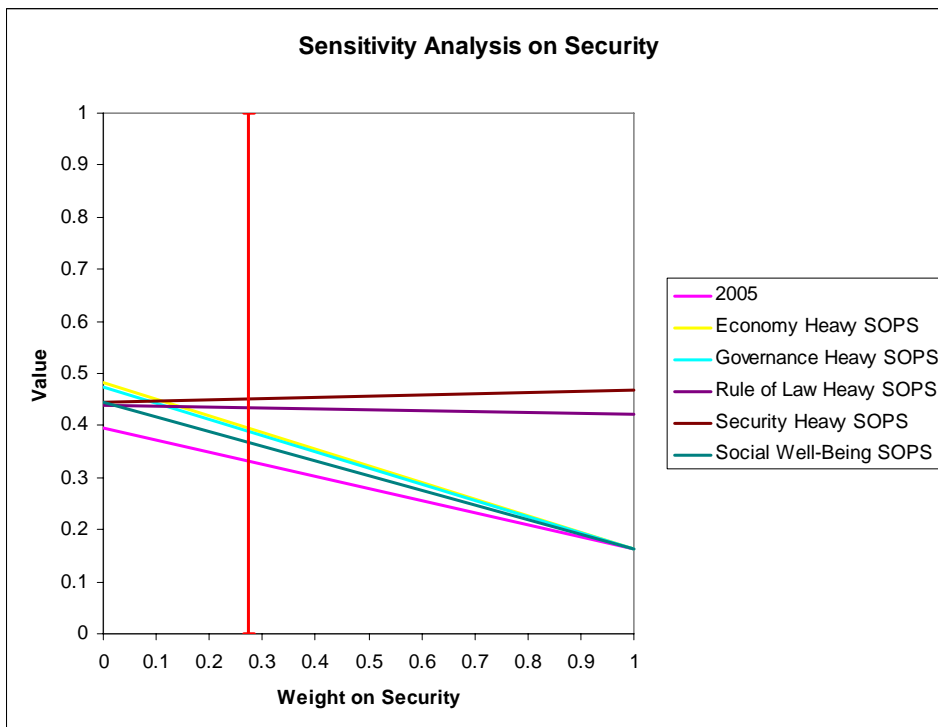


Figure 30: Sensitivity Analysis on Security

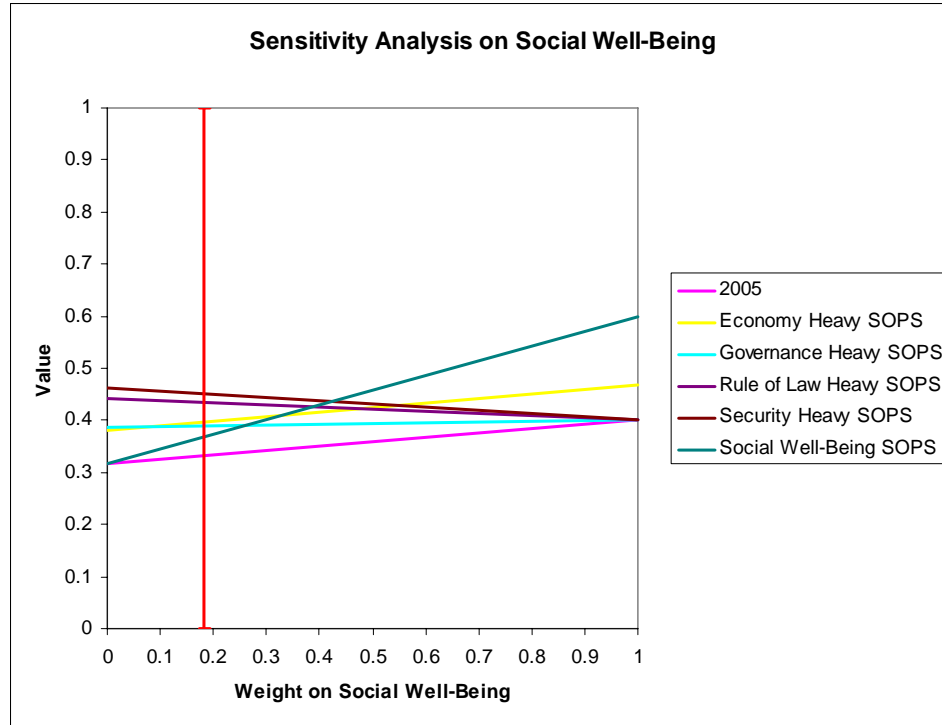


Figure 31: Sensitivity Analysis on Social Well-Being

Such sensitivity analysis can aid in discussions of appropriate methods and to highlight potential changes over points for given policies.

4.4 Summary

This chapter has illustrated the notional functionality of the Directive 3000.05 stability value hierarchy in assessing stability in a nation. First, the ability to assess stability in a nation was demonstrated based on notional source data on Badistan. Next, the ability to prioritize SOPS COAs was demonstrated by examining the implementation of several notional fundamental objective-focused alternatives on Badistan following its 2005 stability assessment. This demonstration provides the reader with examples of the insights that may be gained from the development of a fully vetted hierarchy, weights, and measures system.

5. Conclusions

5.1 Introduction

President Bush initiated a call for defending American interests from failing states in the 2002 NSS. Both the DoD and DoS began creating changes in their departments to implement Stability Operations (SOPS) to combat and re-stabilize failing states. However, multiple reviews and studies have shown a lack of progress in the ability to effectively accomplish SOPS. A major hindrance for the DoD and the DoS has been a lack of methodology to identify, prioritize, evaluate, and predict SOPS. The Secretary of Defense has issued Directive 3000.05 to call for these abilities. This thesis has demonstrated how one might accomplish some of these tasks using a Value Focused Thinking (VFT) approach through the creation of the Directive 3000.05 stability VH. This chapter summarizes the contributions of this research and recommendations for future study.

5.2 Research Contributions

This thesis evaluated the capability of VFT to do two things: prioritize SOPS courses of action (COA) for use against a failing state and evaluate SOPS for effectiveness in restoring stability in a failing state. The research shows that VFT is capable of assisting the Decision Maker (DM) in accomplishing all of these two tasks.

Ultimately, a usable tool for achieving the tasks established by DoD Directive 3000.05 is needed. VFT offers a methodology to distill the important SOPS tasks from official policy documents and subject matter experts down to the core values. An illustrative hierarchy composed of these values was created.

The values in the hierarchy are aligned beneath five fundamental objectives: Economy, Governance, Rule of Law, Security, and Social Well-Being. The Directive 3000.05 stability value hierarchy has 41 measurable attributes and illustrative single dimensional value functions were proposed. Notional weights for the hierarchy were created so that its functionality could be demonstrated.

The ability of the VH to be used to assess the stability was illustrated by scoring the stability of Badistan in 2003 and 2005 based on notional open-source data. This analysis suggested an improvement in the stability of Badistan over this time period.

Next, the ability to identify and prioritize SOPS COAs was illustrated. Different fundamental objective themed SOPS alternatives were created. The alternatives focused on applying greatest effort on each of the five fundamental objectives. The VH analysis provided a priority ranking of alternatives: Security, Rule of Law, Economy, Governance, and Social Well-Being. Sensitivity analysis showed that this order was robust to changes in the weights of each fundamental objective.

This research contributes to the area of SOPS planning and assessment. Until now, few tools were available to assist in this difficult task. The VH and VFT methodology provides a structured way to prioritize SOPS COAs to improve stability and to assess the progress and effectiveness of the COA in restore stability to a failed or failing state.

5.3 Recommendations for Further Research

There are several recommendations for further research into SOPS. First, the weighting of the model should be revisited. The notional weighting was provided to demonstrate the capabilities of the technique. An issue that should be addressed is

whether the weights will vary by region or country or be held constant. This is an important aspect since the Directive 3000.05 is U.S.-centric, specifically DoD-centric. If used in a nation where stability can be achieved without heavy weighting on U.S.-centric values, elections or free market for example, the VH should definitely have weighting changed accordingly. Clearly, actual DM weights will need to be determined prior to using the VH for analysis purposes. As stated earlier, the swing weighting method is recommended as it incorporates the ranges of the attributes in the weights.

Another avenue of further research is to establish accepted attributes for the Directive 3000.05 stability VH. The VH suggests the DMs values in measuring Nation-State stability. However, it is possible that some of the data to measure what the DMs value may be currently unavailable. As stated in Chapter 4, there may be three solutions to missing data: 1) Appropriate missing data techniques may be used; 2) If data can not be obtained due to the reasons that data will never be able to be obtained, the analyst should recommend that the VH be reevaluated and new attributes developed; and 3) If data has not been obtained but could be, issue an Intelligence requirement to obtain the data. Ultimately, the attributes must be justified and vetted by the DM and SMEs. This calls attention to the need to collect metrics based on what the DMs value in stability. The VHs can be used to guide this data collection. The VH will produce a more accurate assessment if better inputs are obtained. Nathan Nysether's work to create a database of open source stability metrics may be a good starting point (Nysether 2007).

The last significant further research path would be to improve the prediction of COA outcomes. Currently COAs are identified, their predicted outcomes are scored using the VH and ranked based on these scores. If the estimate of COA outcomes is

inaccurate so is the ranking. Simulation and modeling could be used to improve the accuracy of such predictions. The Stability and Reconstruction (S&R) Operations Model (SROM) was created to investigate stability from a regional perspective. SROM is a systems dynamics-based model developed by Robbins (2005) to evaluate S&R at a sub-regional level by looking at the changes of controllable factors such as troop deployments, indigenous security forces training, and aid money. These factors are similar to the attributes in the VH used to evaluate stability. A simulation such as SROM could be used to evaluate/predict the outcomes of several SOPS COAs. The outcomes could then be scored based on the VH to rank the COAs.

5.4 Conclusion

This research used the value focused thinking (VFT) methodology to develop a value hierarchy based on DoD Directive 3000.05 and prominent SOPS experts' opinions to measure stability in failing states. The methodology can be used to prioritize SOPS COAs and evaluate stability in failing states. Through demonstration in notionally modeling of the stability in Badistan, the methodology is shown to be highly promising in measuring progress and robust to changes in inputs. Likewise, the ability to prioritize SOPS COAs based on the current evaluation of a failed state was illustrated. This research has promising contributions to the SOPS community by providing this urgently needed methodology.

Appendix A: SOPS Lessons Learned

Germany WWI (Defense Science Board 2005a:33)

- Thinking must be done about changing political and cultural frameworks
- Idealist peace documents don't address necessary changes for stability
- Allied troops need presence on enemy soil
- Enemy must unconditionally surrender to allow for SOPS to be successful
- Reparations should be addressed after rebuilding the economy
- Peace treaty should not humiliate the defeated

Germany WWII (Dobbins et al. 2003:20-21)

- Democracy can be transferred, and societies can be encouraged to change
- Defeated populations can sometimes be more cooperative than anticipated
- Enforced accountability for past injustices can facilitate transformation
- Dismembered and divided countries can be difficult to put back together
- Defeated countries often need large transfers to cover basic government expenditures and quickly provide humanitarian assistance post-conflict
- Reparations immediately following the conflict are counterproductive. The economy must grow before a country can compensate the victims of the conflict
- Permitting more than one power to determine economic policy can delay economic recovery

Japan (Dobbins et al. 2003:51)

- Democracy can be transferred to non-Western societies
- How responsibility for the war is assigned can affect internal political dynamics and external relations in the future
- Co-opting existing institutions can facilitate nation-building better than building new ones from scratch
- Unilateral nation-building can be easier than multilateral efforts
- Concentrating the power to make economic policy decisions in the hands of a single authority can facilitate economic recovery
- Delegating implementation of economic policy decisions to local governing elites, with their own priorities, can significantly minimize the effectiveness of change
- Idealistic reforms designed for the long-term improvement of the recipient nation must sometimes yield to the immediate global concerns of the occupying power

Panama (Defense Science Board 2005a:14-18)

- Leaders must clarify mission and objectives for SOPS
- SOPS planning process needs to combine plans and policies with operations
- SOPS planning process needs to be linked with combat operations planning
- Planners need political, social, and institutional understanding of the region of SOPS
- Planners can not have responsibility for SOPS execution
- SOPS needs interagency coordination

Somalia (Dobbins et al. 2003:69)

- Nation building objectives should be scaled to available forces, resources, and staying power
- Military forces need to be complemented by civil capabilities for law enforcement, economic reconstruction, and political development
- Unity of command can be as important in peace operations as in war
- There can be no economic or political development without security

Haiti (Dobbins et al. 2003:83-84)

- Short departure deadlines and exit strategies diminish prospects for enduring transformation
- International police armed with weapons and the power to arrest can usefully supplement military peacekeepers
- Broad justice-sector reform is necessary to bolster policing efforts
- Where government is grossly ineffective, it needs to be reformed before reconstruction programs can be successful
- Privatization can be a prerequisite for economic growth, especially where government officials use state-owned enterprises for their own private purposes

Bosnia (Dobbins et al. 2003:107)

- Unity of command can be as important for the civil aspects of peace operations as for the military
- Elections are an important benchmark in progress toward democracy. Held too early, they can strengthen rejectionist forces rather than promote further transformation
- Organized crime can emerge as the greatest obstacle to transformation
- It is difficult to put a nation back together if its neighbors are pulling it apart
- Successful reconstruction in poor and divided countries requires substantial long-term commitment from donors
- Foreign donors need to take an active role in economic policy in countries with stalemated or ineffective governments

Kosovo (Dobbins et al. 2003:126-127)

- Broad participation, extensive burden-sharing, unity of command, and effective U.S. leadership can be compatible
- A slow mobilization of civil elements in SOPS can be costly
- Uncertainty over final international status can hinder democratic transition
- When countries lack effective governmental institutions, placing expatriate staff in positions of authority can facilitate economic policymaking and implementation
- Large-scale assistance can rapidly restore economic growth in conjunction with effective economic institutions

Afghanistan (Dobbins et al. 2003:146)

- Low input of military and civilian resources yields low output in terms of security, democratic transformation, and economic development
- Support of neighboring nations can have an important influence on the consolidation of weak and divided states
- In the absence of pervasive security, the prospects of widespread economic recovery or political development are very limited

Appendix B: Examples of Means-ends Networks to Create Fundamental Objectives

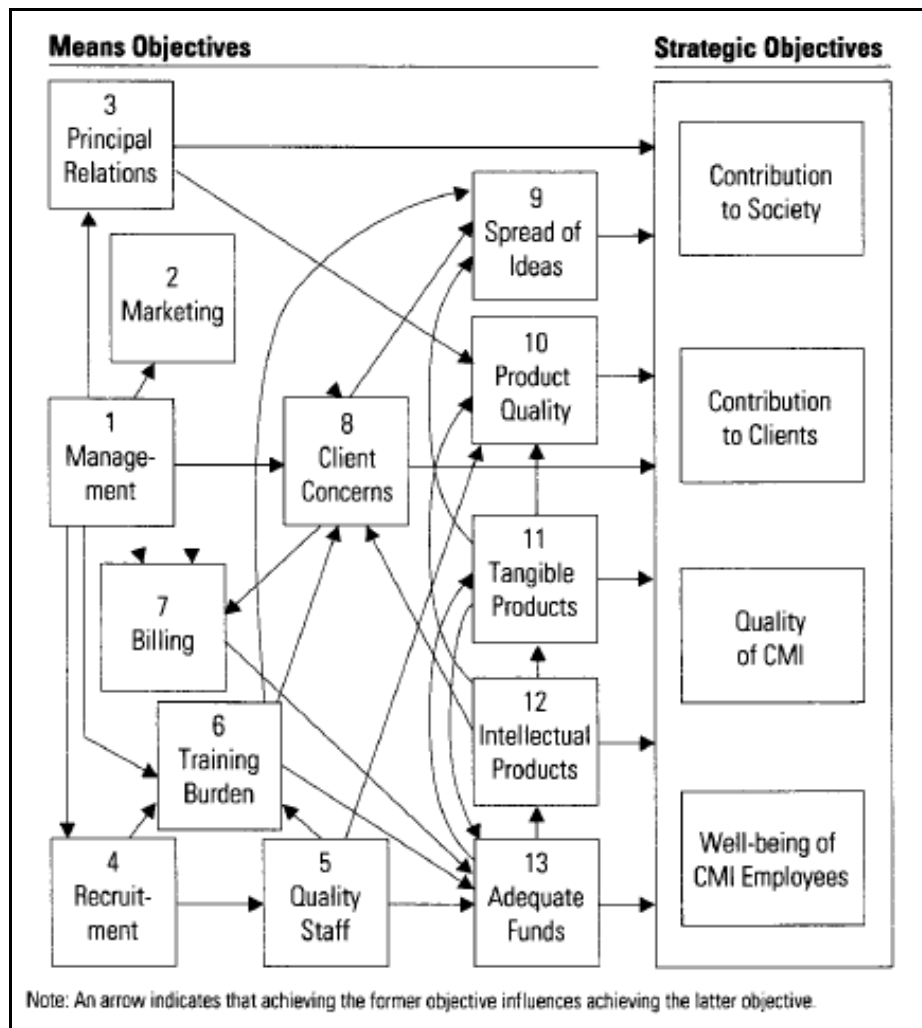


Figure 32: Means-Ends Objectives Network for CMI (Keeney 1994:37)

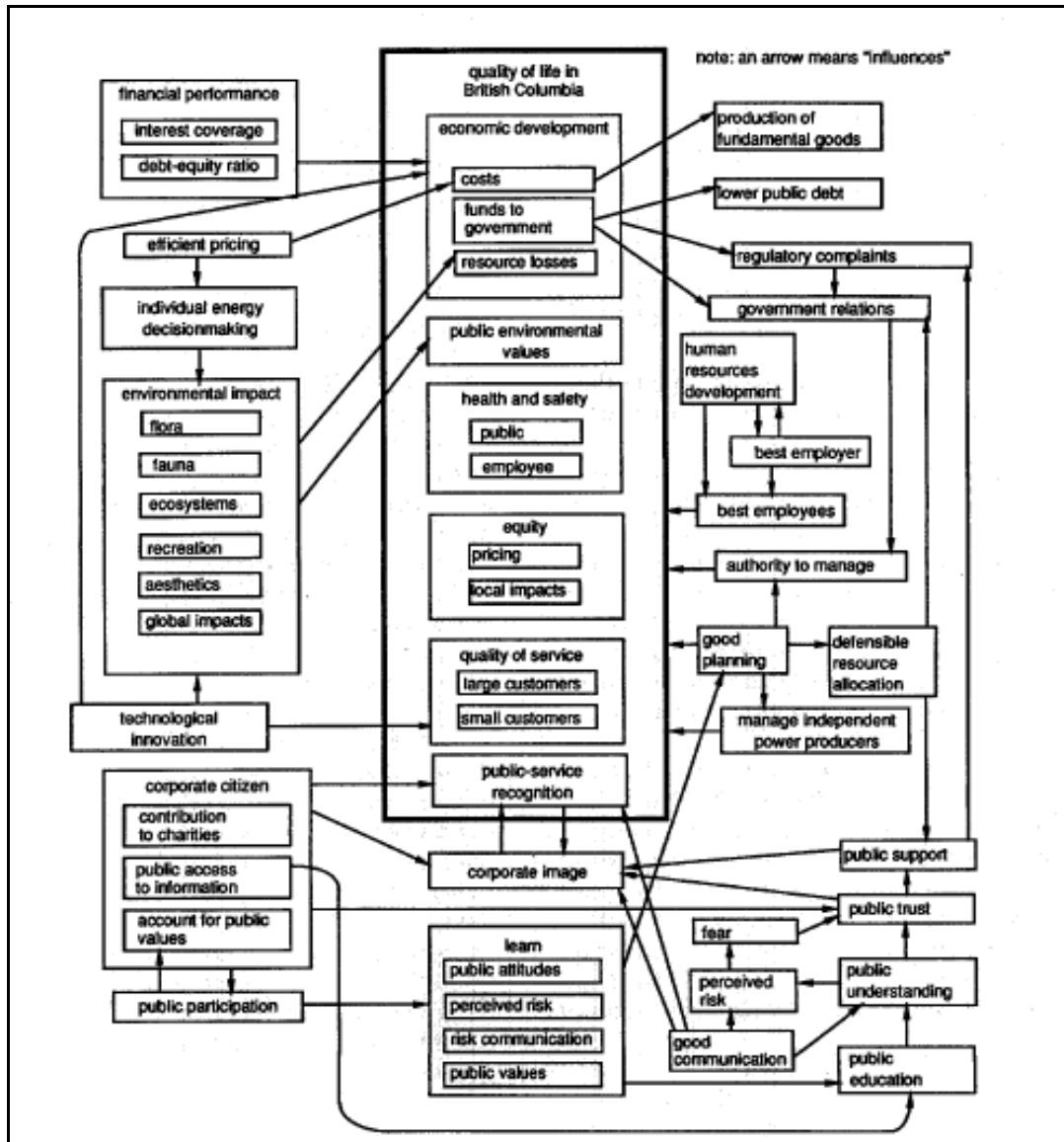


Figure 33: Means-Ends Objectives Network for BCH (Keeney 1996:541)

Appendix C: Parnell's Affinity Diagramming for Foundations 2025

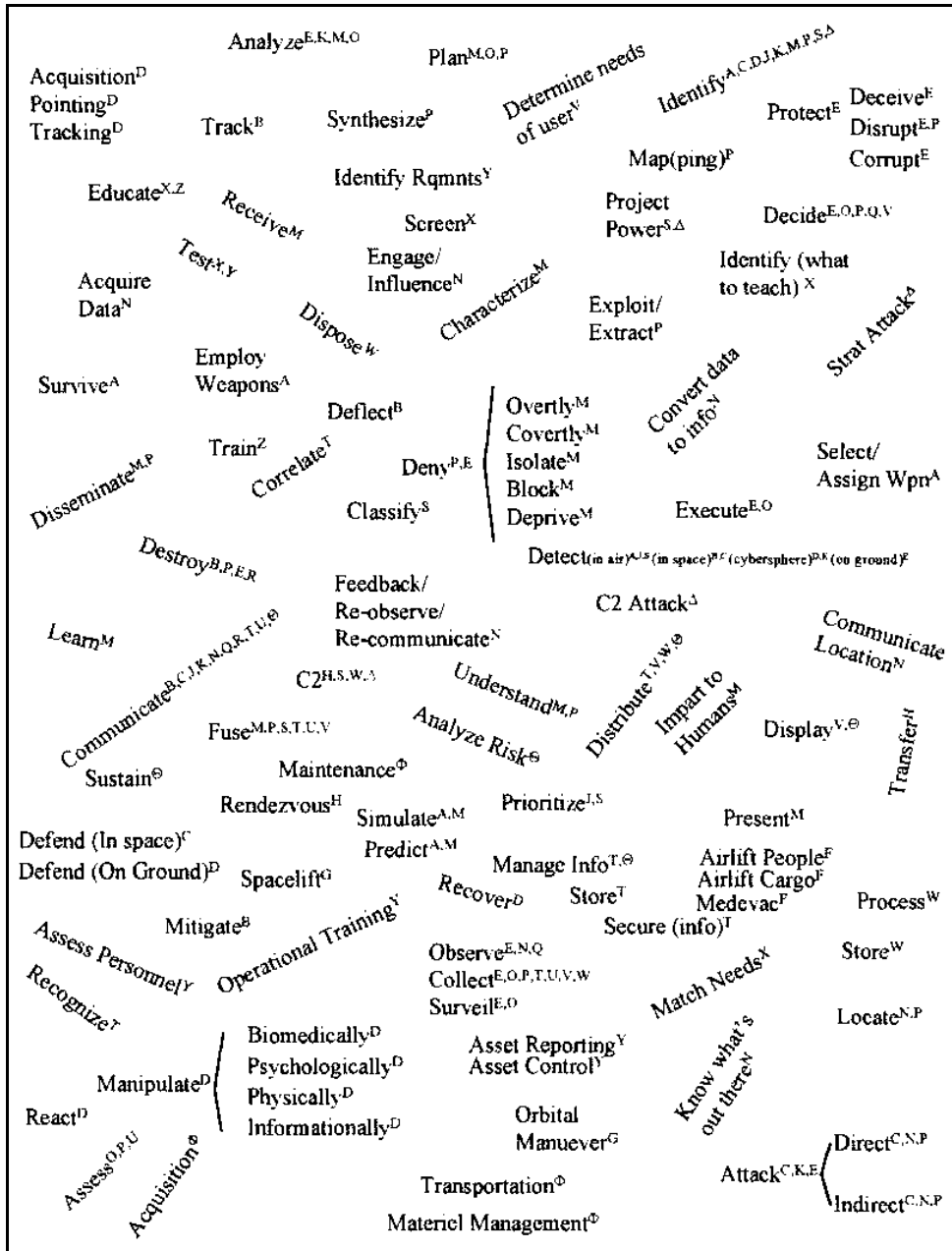


Figure 34: Initial Values for Foundations 2025 (Parnell et al. 1998:1342)

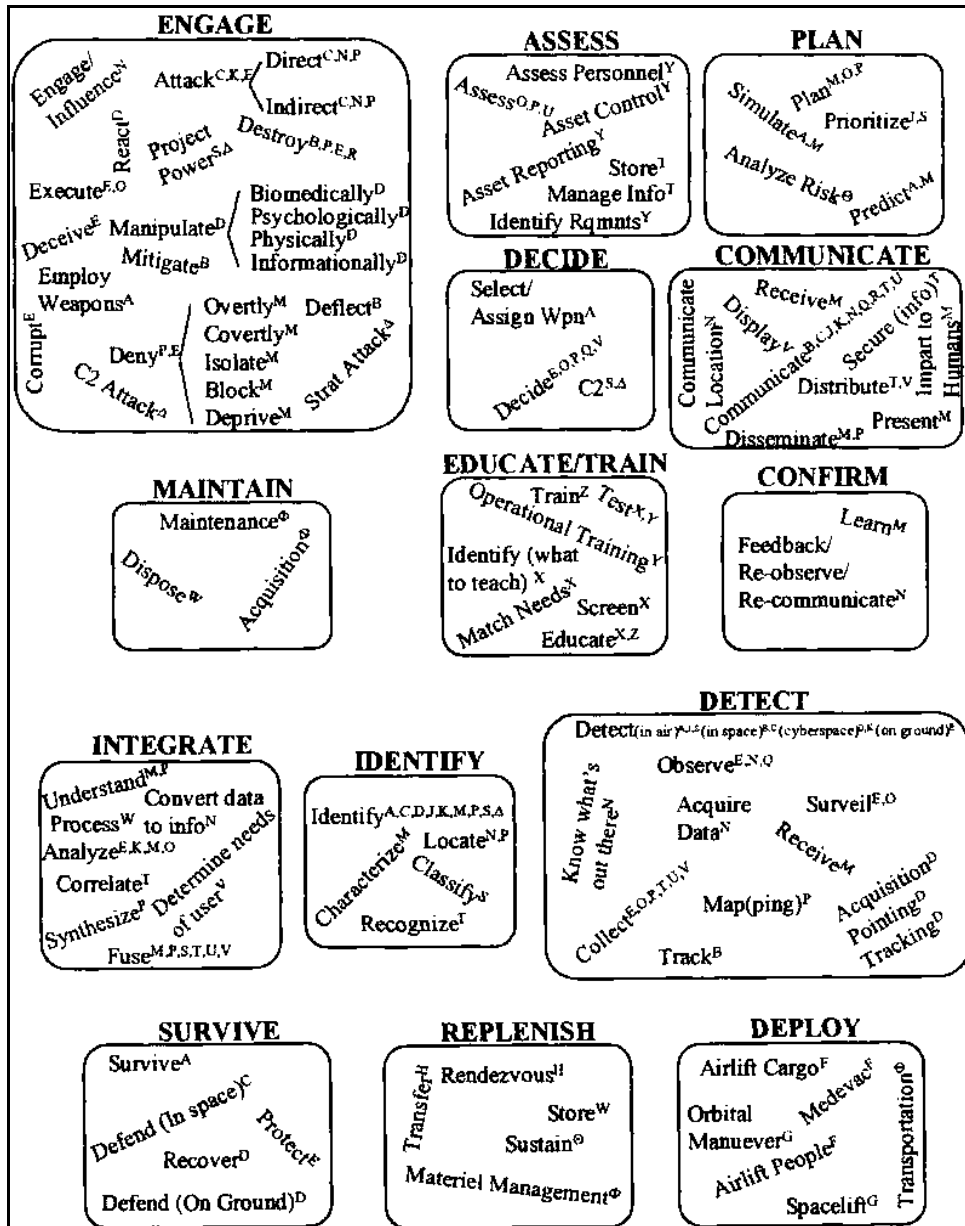


Figure 35: First Affinity Grouping of Values (Parnell et al. 1998:1343)

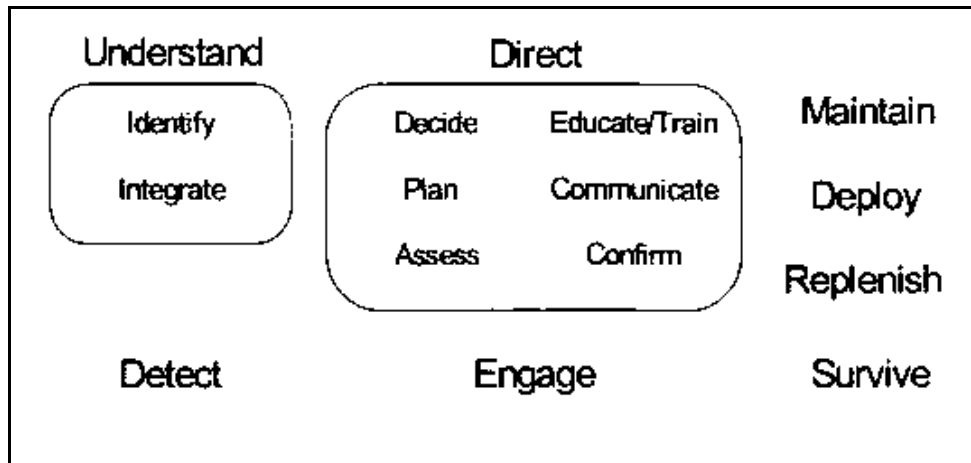


Figure 36: Second Affinity Grouping of Values (Parnell et al. 1998:1344)

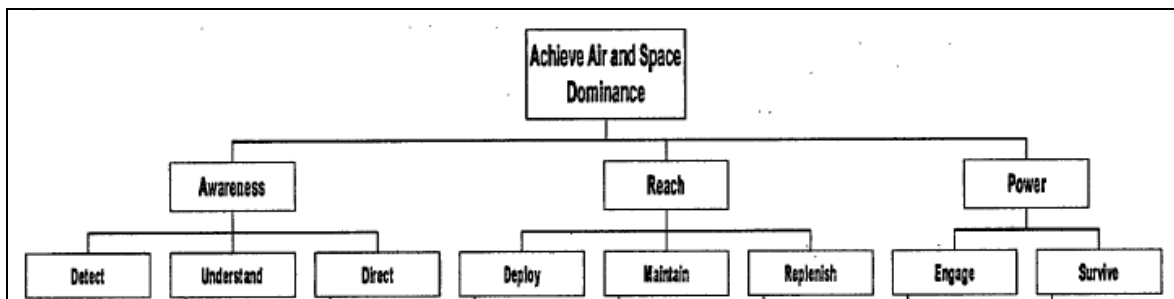


Figure 37: First Two Tiers/Final Affinity Grouping of Values (Parnell et al. 1998:1344)

Appendix D: Decomposition of Orr Values

Tables 51 through 54 of Appendix D show the listing of all the important concepts of SOPS according to the book *Winning the Peace*, edited by Robert Orr. These words and groups of words are values, objectives, or alternatives that were found defining each chapter of the book: Security, Governance, Economic and Social Well-Being, and Justice and Reconciliation. They were not screened except to put the concepts under the appropriate fundamental objective and remove duplication.

Table 51: Security Objectives in *Winning the Peace*

Lasting peace	Border patrol
Indigenous forces	Customs support
Public safety	Weapons collection
Free from violence and coercion	Apprehension
Operate schools	Medium force/paramilitary force
Conduct business	Criminal enterprises
Freedom from corruption	Human/drug trafficking
Laws and regulations	Extortion
Cease-fires	Protection rackets
Political agreement	C2
Disarm	Relocation of soldiers
Demobilize	Limit weapons/small arms
Reintegration of combatants	Employment
Rebuild military	Education opportunities
Security forces	Community reintegration
Secure territory	Partnerships with NATO
Secure movement	Security training and education
Unity of effort	Private military companies
Regional security	Share intelligence
Security institutions	Use intelligence
Information and intelligence	Review regulation

Table 52: Governance Objectives in *Winning the Peace*

Process for constituting legitimate government	Mobilizing peace constituencies
Enhancing government capacities	Marginalize spoilers
Ensuring participation	Building state capacity
National dialogue	Civil administration
Constitutional convention	Addressing corruption
Transitional government	Support good governance and peace
Strengthening institutions	Negotiate settlements
Executive and legislative	Design political orders
Service to population	Writing constitution
Enable citizens to be heard	State and local officials
Act on citizens' views	Tax systems
Elections	Self-policing
Political parties	Anticorruption institutions
Civil society	IG
Advocacy groups civic associations	Ombudspersons
Media	Civil service training
Outside assistance	Pass legislation
Constituting process	Transparency of government

Table 53: Social and Economic Objectives in *Winning the Peace*

Legal regulatory framework	Local business
Basic macroeconomic needs	Entrepreneurs
Managing natural resources	Business elite help
Engage private sector	Business educated help
International trade	Establish schools
Basic education services	Teachers
AIDS	Books
Judicial system	School supplies
Contracts	Medical workers
Property rights	Medical facilities
Commercial interests	Free media

Table 54: Justice and Reconciliation Objectives in *Winning the Peace*

Law enforcement	Judges
Civilian authorities	Prosecutors
Human rights	Defense attorneys
Accountable judicial system	Court administrators
Fair constitution	Law enforcement training
Body of law	Legal professionals
Human rights mechanisms	Prisons
Humane corrections system	Courts
Reconciliation mechanisms	Constitution
Past abuses	Legal codes
Resolving grievances	Human rights training
Emergency justice measures	International courts/tribunals
International police	Truth commissions
Mentor indigenous police	Developing rule-of-law
Legal experts	Enforcement mechanisms
Legal code	Monitoring

The first affinity groupings (Tables 55 through 58) of Orr show the decomposition of the previously shown SOPS-related words into sub-objectives of each fundamental objective. The concepts listed previously have been deconstructed into values by the WITI test and then categorized into sub-objectives.

Table 55: First Affinity Grouping of Orr Security Objectives

<ul style="list-style-type: none"> • Public safety <ul style="list-style-type: none"> ○ Free from violence and coercion ○ Operate schools ○ Conduct business • Cease-fires • Rebuild military <ul style="list-style-type: none"> ○ Partnerships with NATO ○ Security training and education ○ Private military companies ○ Security institutions ○ Indigenous forces ○ Review regulations • Unity of effort • Security Forces Capability <ul style="list-style-type: none"> ○ Border patrol ○ Customs support ○ Weapons collection ○ Apprehension 	<ul style="list-style-type: none"> ○ Security forces ○ Secure territory ○ Secure movement ○ Regional security ○ Medium force/paramilitary force • Criminal enterprises <ul style="list-style-type: none"> ○ Human/drug trafficking ○ Extortion ○ Protection rackets • DDR <ul style="list-style-type: none"> ○ Disarming of combatants ○ Demobilizing of combatants ○ Reintegration of combatants ○ Destroy Insurgent C2 ○ Relocation of soldiers ○ Limit weapons/small arms ○ Employment ○ Education opportunities ○ Community reintegration
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Table 56: First Affinity Grouping of Orr Governance Objectives

<ul style="list-style-type: none"> • Process for constituting legitimate government <ul style="list-style-type: none"> ○ National dialogue ○ Constitutional convention ○ Writing constitution • Enhancing government capacities <ul style="list-style-type: none"> ○ Transitional government ○ Strengthening institutions ○ Executive and legislative ○ Service to population ○ Design political orders ○ Tax systems ○ Negotiate settlements ○ Pass legislation ○ Act on citizens' views • Ensuring participation <ul style="list-style-type: none"> ○ Enable citizens to be heard ○ Elections 	<ul style="list-style-type: none"> ○ Political parties ○ Civil society <ul style="list-style-type: none"> ▪ Advocacy groups ▪ Civic associations ▪ Free media • Civil administration <ul style="list-style-type: none"> ○ State and local officials ○ Civil service training • Addressing corruption <ul style="list-style-type: none"> ○ Support good governance and peace ○ Self-policing ○ Anticorruption institutions ○ IG ○ Ombudspersons ○ Marginalize spoilers ○ Transparency of government
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Table 57: First Affinity Grouping of Orr Social and Economic Well-Being Objectives

<ul style="list-style-type: none"> • Basic macroeconomic needs • Managing natural resources • Market Economy <ul style="list-style-type: none"> ○ Engage private sector <ul style="list-style-type: none"> ▪ Local business ▪ Entrepreneurs ▪ Business elite help ▪ Business educated help • International trade 	<ul style="list-style-type: none"> • Basic education services <ul style="list-style-type: none"> ○ Establish schools ○ Teachers ○ Books ○ School supplies • Medical Care <ul style="list-style-type: none"> ○ AIDS ○ Medical workers ○ Medical facilities
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Table 58: First Affinity Grouping of Orr Justice and Reconciliation Objectives

<ul style="list-style-type: none"> • Law enforcement <ul style="list-style-type: none"> ○ International police ○ Mentor indigenous police ○ Law enforcement training ○ Civilian authorities • Accountable judicial system <ul style="list-style-type: none"> ○ Emergency justice measures ○ Legal experts ○ Legal code ○ Judges ○ Prosecutors ○ Defense attorneys ○ Court administrators ○ Legal professionals ○ Courts ○ Enforcement mechanisms ○ Monitoring 	<ul style="list-style-type: none"> • Body of law <ul style="list-style-type: none"> ○ Developing rule-of-law ○ Fair constitution ○ Constitution ○ Legal regulatory framework ○ Contracts ○ Property rights ○ Commercial interests • Human rights mechanisms <ul style="list-style-type: none"> ○ Human rights training ○ International courts/tribunals ○ Truth commissions • Humane corrections system <ul style="list-style-type: none"> ○ Prisons • Reconciliation mechanisms <ul style="list-style-type: none"> ○ Past abuses ○ Resolving grievances
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The first affinity grouping can further be divided into more succinct sub-objectives by again using the WITI test. The second affinity grouping shows the final affinity grouping in Tables 59 through 62. The second affinity grouping sub-objectives will be the second, third, and subsequent tiers of the value hierarchy pertaining to this author.

Table 59: Second Affinity Grouping of Orr Security Objectives

<ul style="list-style-type: none"> • Public safety <ul style="list-style-type: none"> ○ Free from violence and coercion ○ Freedom of movement <ul style="list-style-type: none"> ▪ Operate schools ▪ Conduct business ▪ Cease-fires 	<ul style="list-style-type: none"> • Military Strength <ul style="list-style-type: none"> ○ Rebuild military ○ Security Forces Capability ○ Unity of effort • Dealing with Enemies <ul style="list-style-type: none"> ○ DDR ○ Criminal Enterprises
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Table 60: Second Affinity Grouping of Orr Governance Objectives

<ul style="list-style-type: none"> • Process for constituting legitimate government <ul style="list-style-type: none"> ○ National dialogue ○ Constitutional convention ○ Writing constitution • Enhancing government capacities <ul style="list-style-type: none"> ○ Strengthening institutions <ul style="list-style-type: none"> ▪ Executive and legislative ▪ Transitional government ○ Governmental Duties <ul style="list-style-type: none"> ▪ Act on citizens' views ▪ Design political orders 	<ul style="list-style-type: none"> ▪ Tax systems ▪ Negotiate settlements ▪ Pass legislation ▪ Addressing corruption ○ Civil administration <ul style="list-style-type: none"> ▪ State and local officials ▪ Civil service training • Ensuring participation (Enable citizens to be heard) <ul style="list-style-type: none"> ○ Elections ○ Political parties ○ Civil society
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Table 61: Second Affinity Grouping of Orr Economic and Social Well-Being Objectives

<ul style="list-style-type: none"> • Economic Well-Being <ul style="list-style-type: none"> ○ Basic macroeconomic needs ○ Managing natural resources ○ Market Economy <ul style="list-style-type: none"> ▪ Engage private sector ▪ International trade 	<ul style="list-style-type: none"> • Social Well-Being <ul style="list-style-type: none"> ○ Basic education services ○ Medical Care
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Table 62: Second Affinity Grouping of Orr Justice and Reconciliation Objectives

<ul style="list-style-type: none"> • Judicial system <ul style="list-style-type: none"> ○ Law enforcement <ul style="list-style-type: none"> ▪ International police ▪ Mentor indigenous police <ul style="list-style-type: none"> • Law enforcement training • Civilian authorities ○ Emergency justice measures ○ Judiciary System <ul style="list-style-type: none"> ▪ Courts ▪ Legal experts <ul style="list-style-type: none"> • Judges • Prosecutors • Defense attorneys 	<ul style="list-style-type: none"> • Court admin • Legal Pros ○ Corrections system ○ Enforcement mechanisms <ul style="list-style-type: none"> ▪ Legal code ▪ Monitoring ▪ Body of law • Human rights mechanisms and Reconciliation mechanisms <ul style="list-style-type: none"> ○ Human rights training ○ International courts/tribunals ○ Truth commissions ○ Past abuses ○ Resolving grievances
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Appendix E: Decomposition of Covey Values

Tables 63 through 66 in Appendix E show the listing of all the important concepts of SOPS according to the book *The Quest for Viable Peace* by Jock Covey et al. These words and groups of words are values, objectives, or alternatives that were found defining each chapter of the book: Politics, Defeating Military Extremists, Rule of Law, and Economy. They were not screened except to put the concepts under the appropriate fundamental objective.

Table 63: Politics Objectives in *The Quest for Viable Peace*

Civil Administration	Mitigate dire humanitarian conditions
Autonomy	Gain consent of the governed
Democratic	Non-violence
European Security and Participation	Mediate conflict
Stabilize internal security	

Table 64: Defeating Military Extremists Objectives in *The Quest for Viable Peace*

Interethnic violence	Detention facility
Criminal Violence	Police force
Organized Crime	Policing procedures
Deterring renewed hostilities	Local police academy
Cease-fire	Local police forces
Withdrawal of paramilitary forces	Securing operations center of gravity
Demilitarizing armed groups	Local info ops
Refugee/IDP security	Deterring aggression
Public Safety	Neutralizing extremists
Demining	Violence across boundaries of state
Border Monitoring	Security of minorities
Protection for Allies	Judicial and detention
Operate within Law	Maximizing multinational strength
Separate Extremists from Support	Municipal and regional administrative structures
Body of applicable law	Joint mil-police command and control
Judiciary	Elections
Detention rules	Providing access to schools, amenities, work, health care, and religion for all
Detention review procedure	Return of refugees and internally displaced persons (IDP)
Appeals procedure	
Train forces and equip them for law enforcement	

Table 65: Rule of Law Objectives in *The Quest for Viable Peace*

Public safety	Training and Graduating
Order	Local Judges and Prosecutors
Civil law and order,	Judicial System
Local police forces	Legal Process
Interim law enforcement services	Detainment
Professional and impartial police services	Legal Training/Education
Protecting and promoting human rights	Penal System
Judiciary and penal system	Prison Management
Basic civil administrative functions	Prison Institution
Administration of courts	Prison Staff
Prosecution services	Applicable Law
Prisons	Criminal Intel
Police	Criminal Investigation
Patrolling	High risk arrests
Protection	Crowd Control
Other Police Duties	International Judges and Prosecutors
Build-up of forces (minimum manning)	Close Protection of authorities
Fixed Posts	Incarceration

Table 66: Rule of Law Objectives in *The Quest for Viable Peace*

Taxes	Mechanisms for solving disputes
War Profiteering	Revenue for state
Arms Smuggling	Economic Crime
Grey Economy	Money Laundering
Avoidance of taxes	Financial transaction reporting
Violation of regulations	Humanitarian aid
Smuggling	Tents
Evasion of economic embargoes	Heating Stoves
Currency manipulation	Clothes and blankets
Exploitation of raw material resources	Mattresses
Black Economy	Food
Money laundering	Power
Trafficking of weapons, drugs, and women	Power plants must be viable
Illicit Sources of Revenue	Engineers and technicians must be available
Customs services	Power grid must be operational
Exchange rates	Basic Services
Internal markets	Teachers
Power brokers.	Doctors
Unaccountable revenue streams	Government officials
Gray and black market activities	Utilities
Trafficking, smuggling, extortion	Power
Economic Reconstruction	Water
Humanitarian Aid	Sewage
Disaster Relief	Garbage Collection
Macroeconomic fundamentals	Telecom
Currency	Railroad
Banking System	Airport
Regulatory framework	Customs Service
Business registration system	Basic Property Rights
Enterprise and contract laws	Banks and finance
Competition and investment laws	Foreign Trade and company registration

The SOPS concepts listed above have multiple listings that are either duplicated or designated under the inappropriate fundamental objective. Tables 67 through 71 show the sub-objectives re-grouped under the appropriate fundamental objective.

Table 67: Deconstructed Objectives Reorganized Under Governance Objectives

Civil Administration	Mediate conflict
Autonomy	Elections
Democratic	Municipal and regional administrative structures
Gain consent of the governed	
Non-violence	

Table 68: Deconstructed Objectives Reorganized Under Security Objectives

Stabilize internal security	Operate within Law
European Security and Participation	Separate Extremists from Support
Interethnic violence	Securing operations center of gravity
Deterring renewed hostilities	Local info ops
Cease-fire	Deterring aggression
Withdrawal of paramilitary forces	Neutralizing extremists
Demilitarizing armed groups	Violence across boundaries of state
Refugee/IDP security	Maximizing multinational strength
Public Safety	Joint mil-police command and control
Demining	Providing access to schools, amenities, work, health care, and religion for all
Border Monitoring	
Protection for Allies	

Table 69: Deconstructed Objectives Reorganized Under Rule of Law Objectives

Judicial and detention	Patrolling
Body of applicable law	Protection
Judiciary	Other Police Duties
Detention rules	Build-up of forces (minimum manning)
Detention review procedure	Fixed Posts
Appeals procedure	Training and Graduating
Train forces and equip them for law enforcement	Local Judges and Prosecutors
Detention facility	Judicial System
Police force	Legal Process
Policing procedures	Detainment
Local police academy	Legal Training/Education
Local police forces	Penal System
Public safety	Prison Management
Order	Prison Institution
Civil law and order,	Prison Staff
Local police forces	Applicable Law
Interim law enforcement services	Criminal Intel
Professional and impartial police services	Criminal Investigation
Protecting and promoting human rights	High risk arrests
Judiciary and penal system	Crowd Control
Basic civil administrative functions	International Judges and Prosecutors
Administration of courts	Close Protection of authorities
Prosecution services	Incarceration
Prisons	Mediate conflict
Police	Criminal Violence
	Organized Crime

Table 70: Deconstructed Objectives Reorganized Under Social Well-Being Objectives

Mitigate dire humanitarian conditions	Teachers
Humanitarian Aid	Doctors
Disaster Relief	Government officials
Tents	Utilities
Heating Stoves	Power
Clothes and blankets	Water
Mattresses	Sewage
Food	Garbage Collection
Power	Telecom
Power plants must be viable	Railroad
Engineers and technicians must be available	Airport
Power grid must be operational	Return of refugees and internally displaced persons (IDP)
Basic Services	Security of minorities

Table 71: Deconstructed Objectives Reorganized Under Economy Objectives

Taxes	Unaccountable revenue streams
War Profiteering	Gray and black market activities
Arms Smuggling	Trafficking, smuggling, extortion
Grey Economy	Economic Reconstruction
Avoidance of taxes	Macroeconomic fundamentals
Violation of regulations	Currency
Smuggling	Banking System
Evasion of economic embargoes	Regulatory framework
Currency manipulation	Business registration system
Exploitation of raw material resources	Enterprise and contract laws
Black Economy	Competition and investment laws
Money laundering	Mechanisms for solving disputes
Trafficking of weapons, drugs, and women	Revenue for state
Illicit Sources of Revenue	Economic Crime
Customs services	Money Laundering
Exchange rates	Financial transaction reporting
Internal markets	Customs Service
Power brokers	Basic Property Rights

The first affinity grouping shows the decomposition of the SOPS concepts into sub-objectives of each fundamental objective. The concepts listed previously have been deconstructed into values and then categorized into sub-objectives shown in Tables 72 through 76.

Table 72: First Affinity Grouping of Covey Governance Objectives

<ul style="list-style-type: none"> • Capabilities <ul style="list-style-type: none"> ○ Civil Administration ○ Democracy ○ Autonomy • Representing Government <ul style="list-style-type: none"> ○ Gain consent of the governed 	<ul style="list-style-type: none"> ○ Non-violence • Participation in Government <ul style="list-style-type: none"> ○ Elections • Government Infrastructure <ul style="list-style-type: none"> ○ Municipal and regional administrative structures
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Table 73: First Affinity Grouping of Covey Security Objectives

<ul style="list-style-type: none"> • Public Safety <ul style="list-style-type: none"> ○ Refugee/IDP security ○ Demining • Protection of Movement <ul style="list-style-type: none"> ○ Protection for Allies ○ Providing access to schools, amenities, work, health care, and religion for all • Minimize Fighting <ul style="list-style-type: none"> ○ Separate Extremists from Support ○ Operate within Law ○ Deterring renewed hostilities ○ Deterring aggression ○ Cease-fire ○ Neutralizing extremists ○ Stabilize internal security ○ Interethnic violence Local info ops 	<ul style="list-style-type: none"> ○ Securing operations center of gravity • Demobilization <ul style="list-style-type: none"> ○ Withdrawal of paramilitary forces • Disarmament <ul style="list-style-type: none"> ○ Demilitarizing armed groups • Territory Security <ul style="list-style-type: none"> ○ Violence across boundaries of state ○ Border Monitoring • Military Presence <ul style="list-style-type: none"> ○ Maximizing multinational strength ○ Joint mil-police command and control ○ European Security and Participation
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Table 74: First Affinity Grouping of Covey Rule of Law Objectives

<ul style="list-style-type: none"> • Judicial Personnel <ul style="list-style-type: none"> ○ Prosecution services ○ Local Judges and Prosecutors ○ International Judges and Prosecutors ○ Judiciary • Body of Law <ul style="list-style-type: none"> ○ Body of applicable law ○ Civil law and order ○ Appeals procedure ○ Applicable Law ○ Mediate conflict ○ Protecting and promoting human rights ○ Basic Property Rights ○ Enterprise and contract laws ○ Competition and investment laws ○ Mechanisms for solving disputes • Judicial Infrastructure <ul style="list-style-type: none"> ○ Basic civil administrative functions ○ Administration of courts ○ Judicial System ○ Legal Process ○ Order ○ Legal Training/Education • Police Personnel <ul style="list-style-type: none"> ○ Police force ○ Interim law enforcement services ○ Build-up of forces (minimum manning) ○ Local police forces 	<ul style="list-style-type: none"> • Police Infrastructure <ul style="list-style-type: none"> ○ Policing procedures ○ Local police academy ○ Professional and impartial police services ○ Train forces and equip them for law enforcement ○ Training and Graduating ○ Fixed Posts • Police Capability <ul style="list-style-type: none"> ○ Criminal Intel ○ Criminal Investigation ○ High risk arrests ○ Crowd Control ○ Close Protection of authorities ○ Criminal Violence ○ Organized Crime ○ Patrolling ○ Protection ○ Other Police Duties • Corrections Personnel <ul style="list-style-type: none"> ○ Prison Staff • Corrections Infrastructure <ul style="list-style-type: none"> ○ Judicial and detention ○ Detention facility ○ Prisons ○ Penal System ○ Prison Institution ○ Detainment ○ Incarceration • Corrections Management <ul style="list-style-type: none"> ○ Prison Management ○ Detention rules ○ Detention review procedure ○ Judiciary and penal system
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Table 75: First Affinity Grouping of Covey Social Well-Being Objectives

<ul style="list-style-type: none"> • Humanitarian Aid <ul style="list-style-type: none"> ○ Mitigate dire humanitarian conditions • Disaster Relief <ul style="list-style-type: none"> ○ Tents ○ Heating Stoves ○ Clothes and blankets ○ Mattresses ○ Food • Emergency Professionals <ul style="list-style-type: none"> ○ Teachers ○ Doctors • Basic Services <ul style="list-style-type: none"> ○ Utilities ○ Water ○ Sewage ○ Garbage Collection 	<ul style="list-style-type: none"> ○ Telecom • Power <ul style="list-style-type: none"> ○ Power plants must be viable ○ Engineers and technicians must be available ○ Power grid must be operational • Transportation <ul style="list-style-type: none"> ○ Railroad ○ Airport • Rights of Minorities <ul style="list-style-type: none"> ○ Return of refugees and internally displaced persons (IDP) ○ Security of minorities
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Table 76: First Affinity Grouping of Covey Social Well-Being Objectives

<ul style="list-style-type: none"> • Economic Policy <ul style="list-style-type: none"> ○ Taxes ○ Customs services ○ Exchange rates ○ Revenue for state ○ Customs Service • Economic Crime <ul style="list-style-type: none"> ○ War Profiteering ○ Arms Smuggling • Grey Economy <ul style="list-style-type: none"> ○ Avoidance of taxes ○ Violation of regulations ○ Smuggling ○ Evasion of economic embargoes ○ Currency manipulation ○ Exploitation of raw material resources ○ Power brokers 	<ul style="list-style-type: none"> • Black Economy <ul style="list-style-type: none"> ○ Money laundering ○ Trafficking of weapons, drugs, and women ○ Illicit Sources of Revenue ○ Internal markets ○ Unaccountable revenue streams • Economic Reconstruction • Macroeconomic fundamentals <ul style="list-style-type: none"> ○ Currency ○ Banking System ○ Regulatory framework ○ Financial transaction reporting ○ Business registration system
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The first affinity grouping can further be divided into more succinct sub-objectives. The second affinity grouping shows the final affinity grouping of sub-objectives (Tables 77 through 81). The second affinity grouping sub-objectives will be the second, third, and subsequent tiers of the value hierarchy.

Table 77: Second Affinity Grouping of Covey Governance Objectives

<ul style="list-style-type: none"> • Capabilities <ul style="list-style-type: none"> ○ Civil Administration ○ Democracy ○ Autonomy • Representing Government <ul style="list-style-type: none"> ○ Gain consent of the governed 	<ul style="list-style-type: none"> ○ Non-violence • Participation in Government <ul style="list-style-type: none"> ○ Elections • Government Infrastructure <ul style="list-style-type: none"> ○ Municipal and regional administrative structures
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Table 78: Second Affinity Grouping of Covey Security Objectives

<ul style="list-style-type: none"> • Public Safety <ul style="list-style-type: none"> ○ Demining ○ Protection of Movement ○ Refugee/IDP security • Minimize Extremist Threat <ul style="list-style-type: none"> ○ Minimize Fighting ○ Demobilization ○ Disarmament 	<ul style="list-style-type: none"> • Territory Security <ul style="list-style-type: none"> ○ Violence across boundaries of state ○ Border Monitoring • Military Presence <ul style="list-style-type: none"> ○ Maximizing multinational strength ○ Joint mil-police command and control ○ European Security and Participation
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Table 79: Second Affinity Grouping of Covey Rule of Law Objectives

<ul style="list-style-type: none"> • Judicial System <ul style="list-style-type: none"> ○ Judicial Personnel ○ Body of Law ○ Judicial Infrastructure • Law Enforcement <ul style="list-style-type: none"> ○ Police Personnel 	<ul style="list-style-type: none"> ○ Police Infrastructure ○ Police Capability • Corrections <ul style="list-style-type: none"> ○ Corrections Personnel ○ Corrections Infrastructure ○ Corrections Management
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Table 80: Second Affinity Grouping of Covey Social Well-Being Objectives

<ul style="list-style-type: none">• Humanitarian Aid• Emergency Professionals<ul style="list-style-type: none">○ Teachers○ Doctors• Essential Services<ul style="list-style-type: none">○ Utilities	<ul style="list-style-type: none">○ Transportation• Rights of Minorities<ul style="list-style-type: none">○ Return of refugees and internally displaced persons (IDP)○ Security of minorities
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Table 81: Second Affinity Grouping of Covey Economy Objectives

<ul style="list-style-type: none">• Economic Policy• Economic Crime<ul style="list-style-type: none">○ Grey Economy○ Black Economy	<ul style="list-style-type: none">• Economic Reconstruction• Macroeconomic fundamentals
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Appendix F: Defined SOPS Model Objectives

The following are definitions for the fundamental objectives and sub-objectives used in the SOPS model. The bold words correspond to the objectives and sub-objectives. The italicized words are elements of their respective preceding objectives and sub-objectives. The objectives are listed in order of appearance in the SOPS model from top to bottom.

I. Economy—System made up of policy, macroeconomic fundamentals, free market, and international trade that exchanges wealth, goods, and resources mostly free of economic criminal activity.

A. Economic Crime—Black and Grey Market Activities

1. Black Market—Black market activities are defined as "illicit trade in goods or commodities in violation of official regulations". Examples of black market activities are: money laundering, trafficking of weapons, drugs, and women.

2. Grey Market—Grey market activities are defined as illegally obtaining commodities that are generally considered legitimate. Examples of grey market activities are: avoidance of taxes, violation of regulations, smuggling, evasion of economic embargoes, currency manipulation, and exploitation of raw material resources.

B. Economic Development—Development of economy based on the three objectives: Economic Policy, Macroeconomic Fundamentals, and Market Economy.

1. Economic Policy—Economic policy refers to the actions that governments take in the economic field. It covers the systems for setting interest rates and government deficit as well as the labor market, national ownership, and many other areas of government.

Fiscal policy—the size of the government deficit and the methods it uses to finance it.

Fiscal stance: The size of the deficit

Tax policy: The taxes used to collect government income.

Government spending on just about any area of government

Monetary policy is concerned with the amount of money in circulation and, consequently, interest rates and inflation.

Interest rates, if set by the Government

Incomes policies which aim at imposing non-monetary controls on inflation

Bank regulations which affect the money multiplier

Trade policy refers to tariffs, trade agreements and the international institutions that govern them.

2. Macroeconomic Fundamentals—Necessary components needed for economy to work: Currency, Central Banking System, Regulatory Framework, Financial Transaction Reporting, and Business Registration System.

3. Market Economy—Economic system in which the production and distribution of goods and services takes place through the mechanism of free markets guided by a free price system rather than by the state in a planned economy.

a. International Trade—Exchange of goods and services across international boundaries or territories.

b. Private Sector Economy—The part of the economy consisting companies not government-owned. Examples are private firms and companies, corporations, banks, charities, non-governmental organizations and individual companies.

C. Economic Intervention—International community offering economic aid to offset debt and re-fund various stabilization activities in the beginning stages of SOPS.

II. Governance—Governance is a public management process that involves a constituting process, governmental capabilities, and participation of citizens.

A. Constituting Government—Process in which a national government is established either through National Dialogues or Constitutional Conventions.

B. Government Capabilities—Government entity itself and the duties it entails.

1. Administration—Sub-objective of Government Capability that deals with structures, officials and training of the administration of the government.

a. Administrative Infrastructure—Facilities and structures that are needed in order for the administration to be able to govern the populace.

b. Administrative Officials—Appointed positions in the executive and legislative branches of the government at all levels except for positions in the uniformed services.

c. Civil Service Training—Training enabling members of Government Administration at all levels to be able to succeed at governance.

2. Government Duties—Duties performed by the executive and legislative branches of government.

a. Executive Duties—All duties incumbent to the executive branch of government: conduct foreign relations (mediation and negotiation), command armed forces, appoint state officials, administer the government departments and services, and issue executive orders.

b. Legislative Duties—All duties incumbent to the legislative branch of government: create the body of law consisting of civil, economic, human rights, and wartime laws.

3. Transitional Government—Transitional Government made up of international government aid workers and infrastructure.

C. Participation in Government—Ability for populace to take part in and influence government

1. Civil Society—Ability of a population to partake in advocacy groups, civic associations, and free media

2. Democratic Elections—The fair process of a population to choose office holders.

3. Political Parties—Organized groups seeking political power by democratic elections

III. Rule of Law—Comprehensive, four-element justice and reconciliation effort that upholds the law involving: Corrections Capability, Judicial Capability, Law Enforcement Capability, and Reconciliation Capability.

A. Corrections Capability—Ability to punish, rehabilitate, or detain criminals convicted of breaking the law

1. Corrections Infrastructure—The basic facilities, services, and installations of the Corrections System: prisons, half-way houses, and other penal installations.

2. Corrections Personnel—Trained and equipped personnel needed to operate the Corrections System, such as prison staff.

B. Judicial Capability—Ability to try and administer legal processes for criminals suspect of breaking the law

1. Judicial Infrastructure—The basic facilities, services, and installations of the Judicial System such as courthouse and other legal establishments.

2. Judicial Personnel—Trained and equipped personnel needed to operate the Judicial System including: Local Judges and Prosecutors, International Judges and Prosecutors, Defense Attorneys, Court administrators, and legal professionals.

C. Law Enforcement Capability—Ability to maintain law and order and protect the public from physical crime by performing police duties including: Criminal Intel, Criminal Investigation, High Risk Arrests, Crowd Control, Close Protection of

Authorities, Combating Criminal Violence, Dismantling Organized Crime, Patrolling, Protection, and Other Police Duties.

1. Law Enforcement Infrastructure—The basic facilities, services, and installations of the Law Enforcement System such as police HQ, police academy, and fixed posts.

2. Law Enforcement Personnel—Trained and equipped personnel needed to operate the Law Enforcement System such as police, detectives, and police administration.

D. Reconciliation Capability—Ability to reconcile past abuses and grievances of the populace against unfair rule.

IV. Security—Protecting lives of populace from immediate and large-scale violence and restoring the state's ability to maintain territorial integrity.

A. Defeat Extremist/Militant Threat—Causing militant (extremist, insurgent, or warfighter) threat to be incapable of continuing warfare, and securing populace, region, and state from militant warfare.

1. Demobilizing/Disarmament—Minimizing insurgents' capability to wage warfare via methods such as: Destroying Insurgent C2, Clearing and Holding Areas, Closing Insurgent Sanctuaries, and Limiting circulation and individual possession of weapons and small arms

2. Reintegration—Relocate soldiers to communities, provide employment, educational opportunities, and community reintegration programs

3. Territory Security—Deter violence across local and regional boundaries through efforts such as: border security, fortified lines, and impassable barriers.

B. Military—Permanent professional forces of soldiers, sailors, airmen trained in warfare

1. Indigenous Mil Forces—Personnel needed to constitute standing national military.

2. Indigenous Mil Infrastructure—The basic facilities, services, and installations of the Military such as training facilities, intelligence services, and bases of operation.

3. Unity of Effort—All aid in military reconstruction united under Allied Security and Participation (maximizing multinational strength) and Joint mil-police command and control.

C. Public Safety—Freedom of the populace to move about daily activities (ex: school, business, movement of troops/supplies, etc) without fear and harm from violence (ex: mines, violent crime, harassment, etc.)

V. Social Well Being—Sustenance of life and relieving of suffering by way of humanitarian aid, best practices, human rights, essential services, and emergency response systems.

A. Relieving Suffering—Reducing death, pain, distress, loss, or damage to human life with humanitarian aid.

1. Food—Food provided for immediate emergency consumption

2. Shelter—Structures provided for immediate emergency habitation

3. Water—Potable Water source for immediate emergency consumption

B. Sustenance of Life—The support of life of the indigenous persons after emergency.

1. Education—The opportunity for school-aged students to be instructed created by educators, schools, and school supplies.

2. Medical—Prevention, treatment, and management of illness, injury, and the preservation of mental and physical well-being through the services provided by medical staff, hospitals and clinics, and medical supplies.

3. Utilities—Infrastructure needed to support life of indigenous persons: Power, Sewage, Telecom, Trash, and Water

a. Power—Generation, transmission, and distribution of electricity to the region.

b. Public Transportation—The different methods of public and mass international and intra-national transportation via methods like rail, bus, airline, ferries, and taxi.

c. Telecom—Communication over distance via electronic systems including TV, radio, telephone, and computers.

d. Waste Management—Collection, transport, processing, recycling or disposal of natural human or constructed waste materials.

e. Water Supply—System providing water for general use and consumption to region.

Appendix G: Notional Global Weights for Directive 3000.05 Stability VH

Sub-Objectives and Attributes	Current Weight
Security	.273
Governance	.182
Rule of Law	.182
Economy	.182
Social Well-Being	.182
Sustenance of Life	.091
Relieving Suffering	.091
Public Safety	.091
Military	.091
Defeat Extremist/Militant Threats	.091
Level of Public Safety	.091
Economic Intervention	.073
Economic Development	.073
Proportional Level of Economic Aid	.073
Constituting Government	.061
Participation in Government	.061
Government Capabilities	.061
Establishment of Constitution	.061
Judicial Capability	.045
Law Enforcement Capability	.045
Corrections Capability	.045
Reconciliation Capability	.045
Level of Reconciliation Capability	.045
Economic Crime	.036
Indigenous Military Forces	.036
Indigenous Military Infrastructure	.036
Level of Military Infrastructure	.036
Level of Military Forces	.036
Utilities	.030
Food	.030
Medical	.030
Water	.030
Shelter	.030
Education	.030
Level of Food	.030
Level of Shelter	.030
Level of Water	.030
Level of Education	.030
Level of Medical Care	.030
Territory Security	.030
Demobilization and Disarmament of Insurgents	.030
Reintegration of Insurgents	.030
Level of D&D of Insurgents	.030
Level of Reintegration of Insurgents	.030
Level of Territory Security	.030
Macroeconomic Fundamentals	.024
Market Economy	.024
Economic Policy	.024
Level of Economic Policy	.024
Level of Macroeconomic Fundamentals	.024

Corrections Infrastructure	.023
Corrections Personnel	.023
Judicial Infrastructure	.023
Judicial Personnel	.023
Law Enforcement Personnel	.023
Law Enforcement Infrastructure	.023
Level of Corrections Infrastructure	.023
Level of Corrections Personnel	.023
Level of Judicial Personnel	.023
Level of Law Enforcement Personnel	.023
Level of Judicial Infrastructure	.023
Level of Law Enforcement Infrastructure	.023
Government Duties	.020
Administration	.020
Democratic Elections	.020
Political Parties	.020
Civil Society	.020
Transitional Government	.020
Level of Transitional Government	.020
Level of Civil Society	.020
Level of Democratic Elections	.020
Level of Political Parties	.020
Black Market	.018
Grey Market	.018
Level of Black Market Activity	.018
Level of Grey Market Activity	.018
Unity of Effort	.018
Level of Unity of Effort	.018
International Trade	.012
Private Sector Economy	.012
Level of International Trade	.012
Level of Private Sector Economy	.012
Executive Duties	.010
Legislative Duties	.010
Level of Exec Duties	.010
Level of Legislative Duties	.010
Administrative Officials	.007
Civil Service Training	.007
Administrative Infrastructure	.007
Level of Administrative Officials	.007
Level of Administrative Infrastructure	.007
Level of Civ Srv Training	.007
Public Transportation	.006
Level of Transportation	.006
Power	.006
Water Supply	.006
Waste Management	.006
Telecom	.006
Level of Power	.006
Level of Telecommunications	.006
Level of Waste Mgt	.006
Level of Water Supply	.006

Appendix H: Value Hierarchies of Gold and Silver Standards

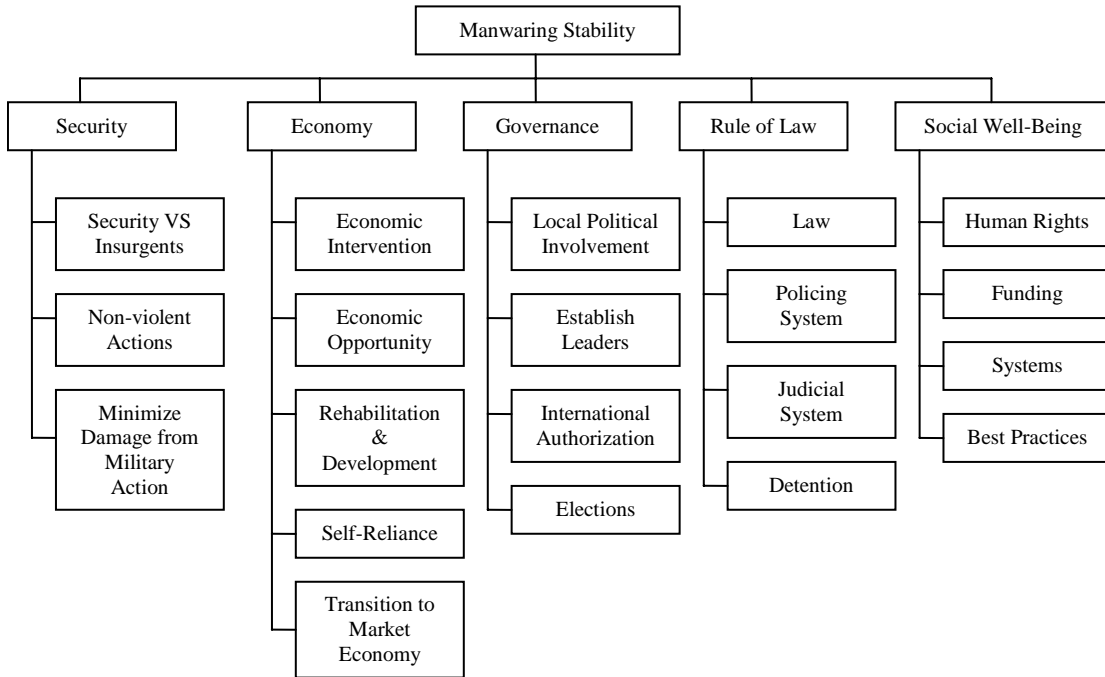


Figure 38: Manwaring and Joes Stable State Showing First Two Tiers

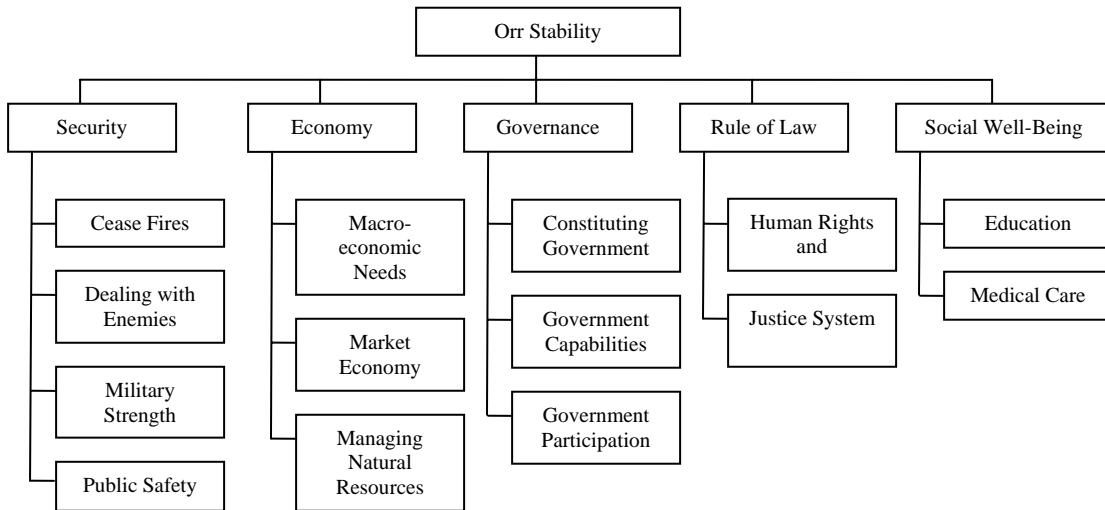


Figure 39: Orr Stable State VH Showing First Two Tiers

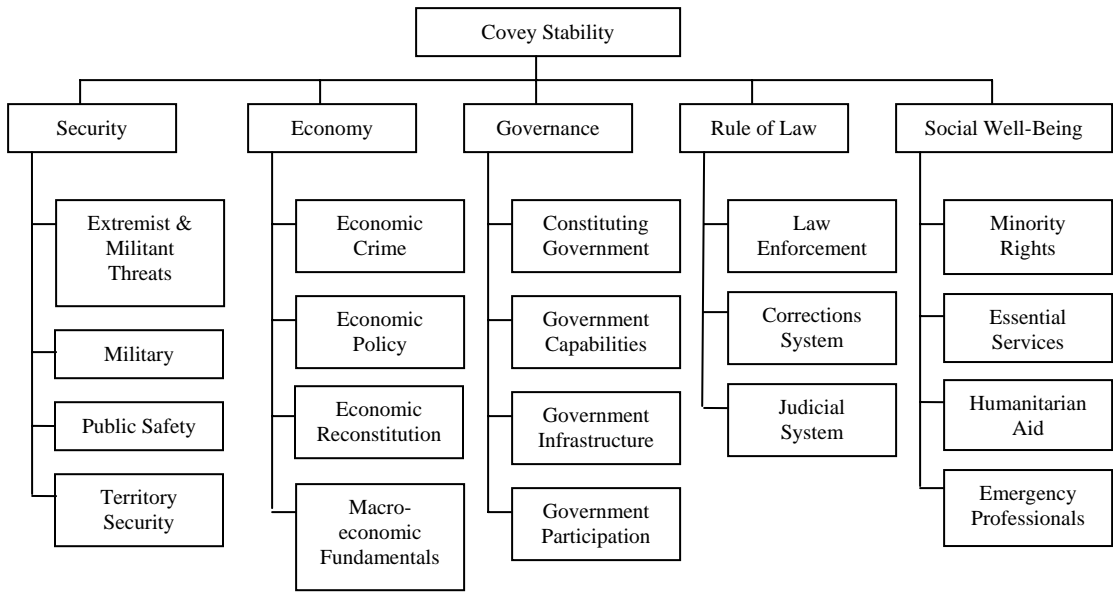


Figure 40: Covey Stable State VH Showing First Two Tiers

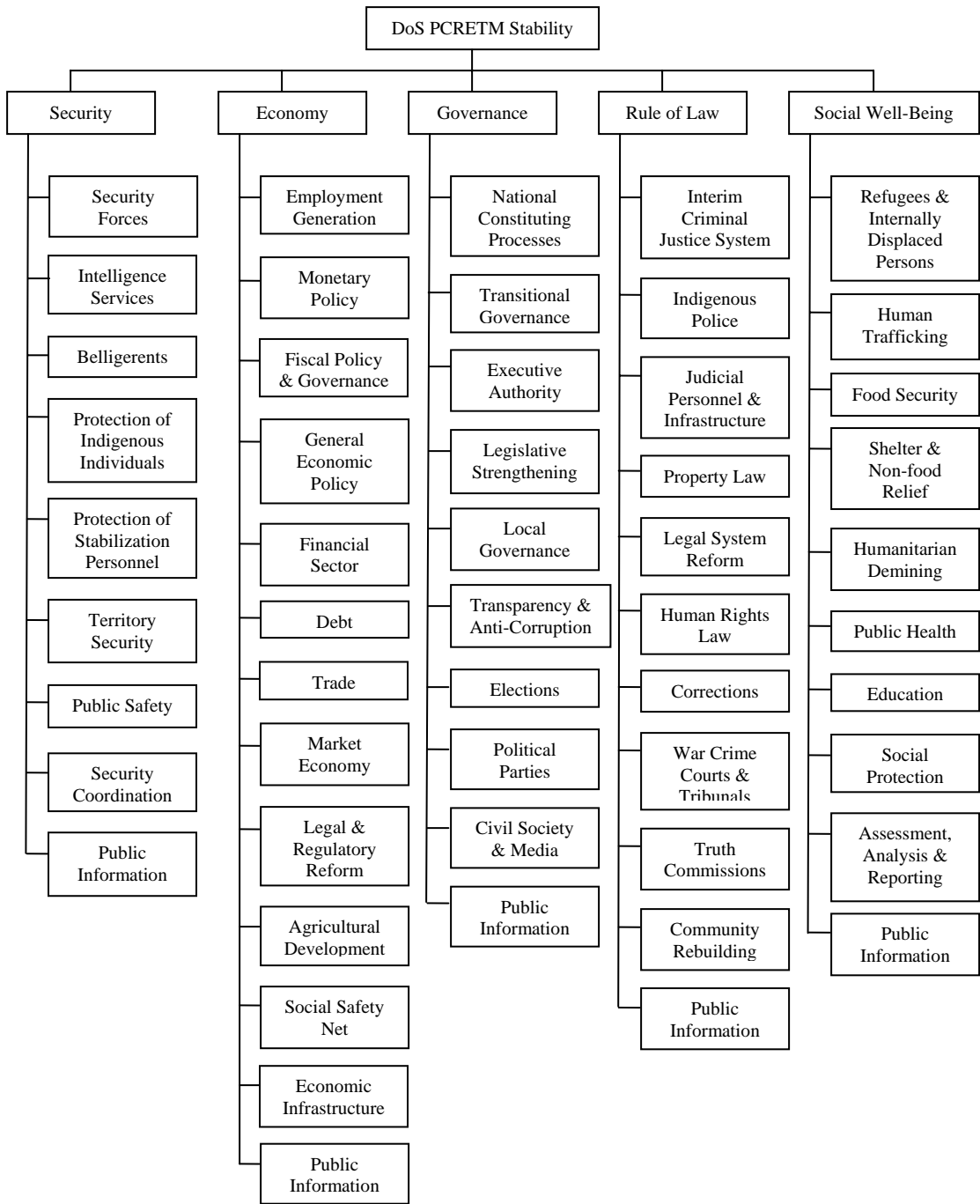


Figure 41: DPCRETM VH

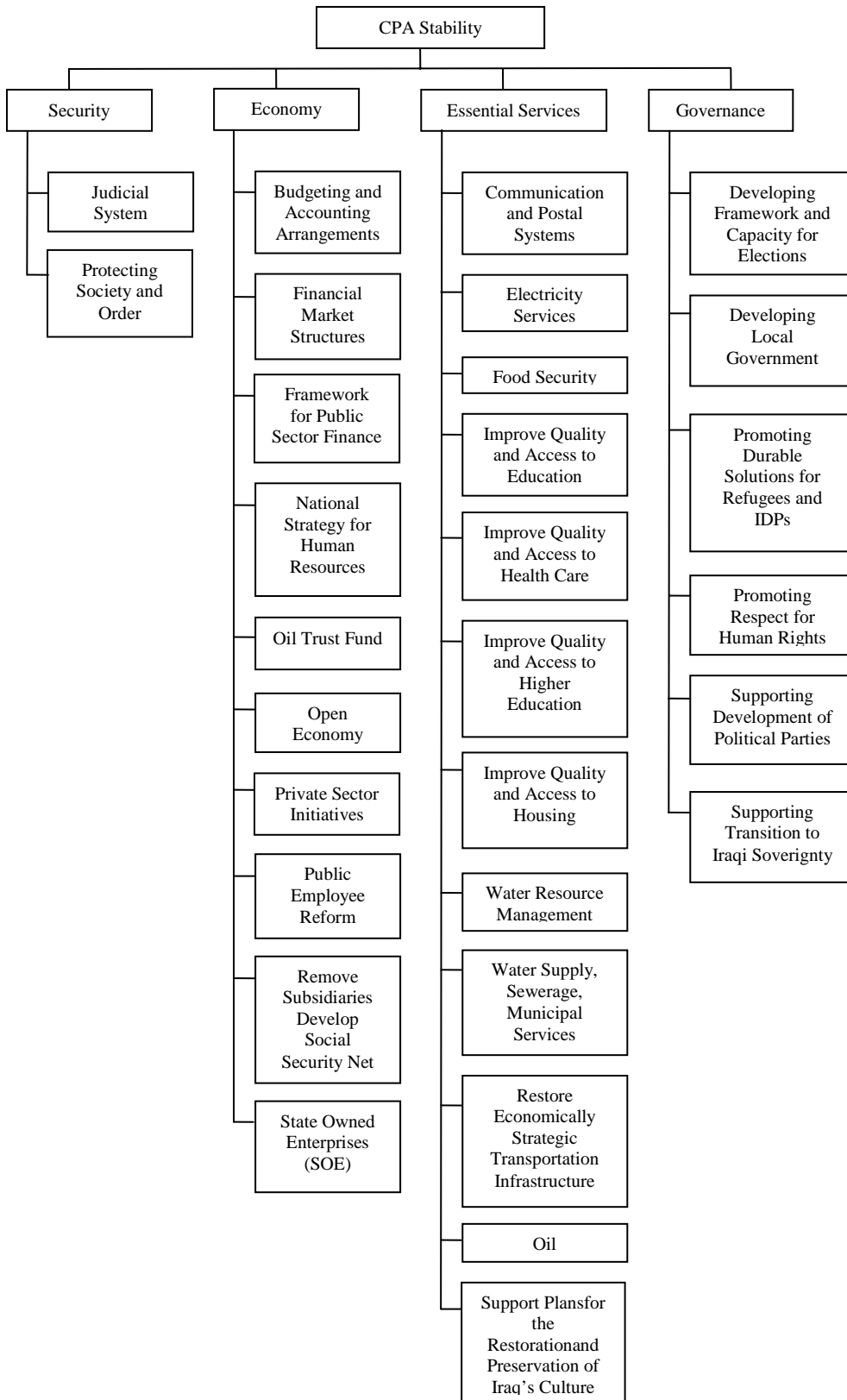


Figure 42: CPA VH Showing First Two Tiers

Bibliography

- Allison, Paul D. (2001). *Missing Data (Quantitative Applications in the Social Sciences)*. Sage Publications, Inc.
- Belton, V. (1985). The use of a simple multi-criteria model to assist in selection from a shortlist. *Journal of the Operational Research Society*, 36(4), 265-274.
- Brookings Institution. (2007). *Iraq Index: Tracking Variables of Reconstruction and Security In Post-Saddam Iraq*. Washington D.C.: Brookings Institution Press.
- Center for Strategic and International Studies (CSIS). 2004. *Winning the Peace: An American Strategy for Post-Conflict Reconstruction (CSIS Significant Issues, No. 26)*, Ed. Orr R., CSIS Press, Washington, D.C.
- Clemen, R. T. (1996). *Making Hard Decisions: An Introduction to Decision Analysis* (2nd ed.). Belmont, Calif.: Duxbury Press.
- CNN. (2006). *Four U.S. Soldiers Charged with Rape and Murder*. Retrieved Oct. 21, 2006, from <http://www.cnn.com/2006/LAW/10/18/soldiers.court/index.html>
- Covey, J., Dziedzic, M. J., & Hawley, L. R. (2005). *The Quest for Viable Peace: International Intervention and Strategies for Conflict Transformation*. Washington, D.C.; Arlington, Va.: United States Institute of Peace Press; Association of the United States Army.
- Defense Science Board. (2005a). *Defense Science Board 2004 Summer Study on Transition to and From Hostilities Supporting Papers*. Washington, D.C. Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.
- Defense Science Board. (2005b). *Report of the Defense Science Board Task Force on Institutionalizing Stability Operations within DoD*. Washington, D.C. Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.
- Defense Science Board. (2004). *2004 Summer Study on Transition to and from Hostilities*. Washington, D.C.: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.
- Department of State. (2006). *Budget of the United States Government, Fiscal Year 2006*. Retrieved Feb. 27, 2007, from <http://www.whitehouse.gov/omb/budget/fy2006/budget.html>
- Department of State. (2005a). *Department Post Conflict Reconstruction Essential Tasks Matrix*. Retrieved Aug. 1, 2006, from <http://www.state.gov/s/crs/rls/52959.htm>

- Department of State. (2005b). *Office of the Coordinator for Reconstruction and Stabilization Fact Sheet*. Retrieved Oct./14, 2006, from <http://www.state.gov/s/crs/rls/43327.htm>
- Dobbins, J., J.G. McGinn, K. Crane, S.G. Jones, R. Lal, A. Rathmell, R.M. Swanger, A. Timilsina. (2003). *America's Role in Nation-Building: From Germany to Iraq*. Santa Monica, CA: RAND.
- Edwards, W. (1978). Use of multiattribute utility measurement for social decision making. In D. E. Bell, R. L. Keeney & H. Raiffa (Eds.), *Conflicting Objectives in Decisions*. New York: Wiley.
- Gove, P. B., & Merriam-Webster, I. (2002). *Webster's Third New International Dictionary of The English Language, Unabridged*. Springfield, Mass.: Merriam-Webster.
- Gregory, R. & Keeney, R. L. (1994). Creating policy alternatives using stakeholder values. *Management Science*, 40(8), 1035.
- Joint Warfighting Center Pamphlet (JFWC Doctrine Pam) 7. Operational Implications of Effects-based Operations (EBO), 17 November 2004.
- Keeney, R. L. (1996). Value-focused thinking: Identifying decision opportunities and creating alternatives. *European Journal of Operations Research*, 92, 537-549.
- Keeney, R. L. (1994). Creativity in decision making with value-focused thinking. *Sloan Management Review*, Summer, 33-41.
- Keeney, R. L. (1992). *Value-Focused Thinking: A Path to Creative Decisionmaking*. Cambridge, Mass.: Harvard University Press.
- Keeney, R. L., & Raiffa, H. (1993). *Decisions with Multiple Objectives: Preferences and Value Tradeoffs*. Cambridge, England; New York, NY, USA: Cambridge University Press.
- King, N., Jr., & Jaffe, G. (2003). *U.S. Sets New Mission for Keeping the Peace: Pentagon Seeks Better Ways to Foster Postwar Stability and Reconstruction*. Wall Street Journal, January 3, 2006, p. 4.
- Kirkwood, C. W. (1997). *Strategic Decision Making: Multi-objective Decision Analysis with Spreadsheets*. Belmont: Duxbury Press.
- Knighton, Shane N. Class notes, OPER 643, Advanced Decision Analysis. School of Engineering and Management, Air Force Institute of Technology, Wright-Patterson AFB OH, Spring Quarter 2006.

- Kwinn, Michael J., D. Ragsdale, J. Brence, T. Morel, E.A. Pohl, S. Goldman, M. Gorak, E. Tollefson, R.F. Deckro, C. Carver. (2004). Operation Enduring Freedom Assessment System Development. *Proceedings of the US South Korean Defense Department's Operations Research Symposium*, South Korea.
- Leon, O. G. (1999). Value-focused thinking versus alternative-focused thinking: Effects on generation of objectives. *Organizational Behavior and Human Decision Processes*, 80(3), 213-227.
- Little, Roderick J. A. & Rubin, Donald B. (2001). *Statistical Data Analysis with Missing Data*. 2nd ed. Wiley Interscience.
- Manwaring M. G. and A. J. Joes. (2000). *Beyond Declaring Victory and Coming Home: The Challenges of Peace and Stability Operations*, Praeger, Westport, Conn.
- Merriam-Webster. (2006). *Merriam-Webster Online Dictionary*. Retrieved November/13, 2006, from <http://www.merriamwebster.com/>
- Merrick, Jason R. W., Parnell, G. S., Barnett, J., & Garcia, M. (2005). A multiple-objective decision analysis of stakeholder values to identify watershed improvement needs. *Decision Analysis*, 2(1), 44-57.
- Nysether, N. E. (2007). *Classifying Failing States*. MS Thesis, School of Engineering and Management, Air Force Institute of Technology, Wright-Patterson AFB, OH.
- Parnell, G., Engelbrecht, J. Szafranski R., & Bennett, E. (2002). Improving Customer Support Resource Allocation. *Interfaces*, 32(3), 77-90.
- Parnell, G. S., Conley, H. W., Jackson, J. A., Lehmkuhl, L. J., & Andrew, J. M. (1998). Foundations 2025: A value model for evaluating future air and space forces. *Management Science*, 44(10), 1336.
- Robbins, M. J. (2005). Investigating the Complexities of Nationbuilding: A Sub-National Regional Perspective. MS Thesis, School of Engineering and Management, Air Force Institute of Technology, Wright-Patterson AFB, OH.
- Serafino, N. M., & Weiss, M. A. (2005). *Peacekeeping and Conflict Transitions: Background and Congressional Action on Civilian Capabilities*. The Library of Congress: Congressional Research Service.
- Stewart, Theodor J. (1991). A Multi-criteria Decision Support System for R&D Project Selection. *Journal of the Operational Research Society*, 42(1), 17-26.
- Stiglitz, J. (2006). Good numbers gone bad: Why relying on GDP as a leading economic gauge can lead to poor decision-making. [Electronic version]. *Fortune*, 154(7)

- United Nations Development Program. (2006). *UNDP and Governance Experiences And Lessons Learned*. United Nations: Management Development and Governance Division.
- U.S. Agency for International Development. (1998). Democracy and governance: A conceptual framework. *PN-ACC-395*. Washington D.C.: Center for Democracy and Governance, Bureau for Global Programs, Field Support, and Research, U.S. Agency for International Development
- U.S. Department of Defense. (2005). *Military Support For Stability, Security, Transition, and Reconstruction (SSTR) Operations*. DoD Directive 3000.05. Washington D.C.: Government Printing Office.
- U.S. Department of Defense. (2004). *Stability Operations Joint Operating Concept*. Washington D.C.: The Pentagon.
- U.S. National Security Council. (2006). *The National Security Strategy For The United States*. Washington D.C.: The White House.
- U.S. National Security Council. (2002). *The National Security Strategy Of The United States*. Washington D.C.: The White House.
- Von Winterfeldt, Detlof & Edwards, Ward. (1986). *Decision Analysis and Behavioral Research*. Cambridge, England: Cambridge University Press.
- Washington Post. (2006). *Abu Ghraib Prison*. Retrieved Oct. 21, 2006, from <http://www.washingtonpost.com/wp-dyn/world/mideast/gulf/iraq/prisoners/>
- Weir, Jeffery D. Class notes, OPER 743, Decision Analysis Practice. School of Engineering and Management, Air Force Institute of Technology, Wright-Patterson AFB OH, Fall Quarter 2006.

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