Chapter Title: Insights from Interviews

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Insights from Interviews

This chapter describes our qualitative results. The purpose of this analysis was to obtain qualitative information on the factors that may affect language workforce mix decisions in the IC but that are not amenable to measurement or for which there is little data. Chapter Five presents the quantitative analysis.

The chapter begins with an overview of the methodology used, with a more detailed description given in Appendix B. It then summarizes the major themes that emerged from the interviews we conducted, beginning with a description of the general nature of work performed by language professionals at NSA/CSS. While the specific jobs may differ across missions and locations, we highlight some general characteristics of the work performed. Next, we discuss the limited role of contractors in providing language capability at NSA/CSS, so our focus is on military versus civilian personnel. We then describe what we learned about the perceived advantages and benefits as well as the perceived costs, limitations, and obstacles of using military personnel, and of using civilian personnel in the missions and locations we considered.

Overview of Approach

Because of the tremendous diversity of missions and capabilities that language professionals provide throughout the IC, we decided to focus the analysis on one specific agency, the NSA/CSS. Broadly speaking, a clear advantage of considering the NSA/CSS is that it employs a large number of language professionals, both military and government civilian, in a broad array of missions in multiple locations.[1] That said, there are disadvantages as well. The NSA/CSS employs relatively few contractors to provide language capability, and it is unclear how relevant information garnered from the NSA/CSS is to other agencies and areas of the IC. Furthermore, our interviews, the basis of our qualitative analysis, did not extend to every mission conducted by language professionals at NSA/CSS, or at every site. And our interviews were not with randomly selected groups. Thus, the information garnered from the interviews must be considered suggestive and not definitive. Nonetheless, they provide useful insights about the nature of the work performed by linguists in general, the contributions of different sources of linguists, and some challenges and problems faced by the NSA/CSS from different sources.

With the assistance of the NSA/CSS's senior language authority, we conducted numerous interviews within DoD, ODNI, and NSA/CSS. Both the interview protocol and the qualita-

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[1] Because we did not have access to workforce data in the IC, including the NSA/CSS, we are unable to provide statistics on the relative number of each category of personnel at NSA/CSS or other IC organizations. The statements here are based on input we received from the sponsor and from the interviews.

tive research approach were reviewed and approved by RAND's Institutional Review Board to ensure protection of human subjects. The interviews spanned a number of broad groups:

- Force provider managers: Managers within each service, within NSA, ODNI, and within the Office of the Secretary of Defense (OSD) who have oversight over the career management of language professionals and who administer personnel policies related to this community, including hiring, training, and compensation.
- Force users or product line managers within NSA: We interviewed managers of product lines within NSA/CSS that require language capability.
- Language professionals who supply language capability: We interviewed groups of employees, military and civilian, who provide language capability at the three NSA/CSS cryptologic centers.
- Language trainers: We interviewed managers and educators who provide language training at the Defense Language Institute Foreign Language Center (DLIFLC) and at the National Cryptologic School (NCS).

The interviews were conducted at the three cryptologic centers, as well as at NSA/CSS headquarters at Fort Meade. We also conducted interviews at DLIFLC in Monterrey, California, and interviews with force provider managers within DoD and ODNI in the Washington, D.C., area.

We used the interview protocol, provided in Appendix B, to guide the interviews. We did not seek responses to every question in every interview we conducted, so that we could explore themes raised by interviewees that they considered relevant to the topics we covered. The interview protocol was sent to interviewees ahead of time, so that individuals could have a chance to see the questions and prepare responses if they desired. Some interviewees provided written responses, and, where feasible, their responses are incorporated into our summary of findings. We prepared written notes from our interviews and compiled and organized them according to major themes. These themes are discussed next.

Major Themes Emerging from Our Interviews

We begin the discussion by describing the nature of the work performed by language professionals at NSA/CSS. This discussion draws from both the interviews and from open source material provided on the NSA/CSS website. We then discuss the major themes that emerged about the role of each category of personnel in providing language capability. We conclude with a summary and discussion of findings.

Nature of Work

DoD guidance for determining workforce composition applies criteria to jobs for assigning personnel from nongovernmental and governmental (military and civilian) sources. In determining the potential suitability of each category of personnel, the criteria focus on the activities to be performed for each job.

Our analysis focuses on jobs and activities performed at the National Security Agency that we were told require linguistic capability. The jobs and activities are performed in support of the overall mission of the NSA/CSS, "to protect U.S. national security systems and to

produce foreign signals intelligence information . . . for intelligence and counterintelligence purposes and to support military operations" (NSA/CSS, 2009d).

Cryptology is at the core of the NSA/CSS's mission. Cryptology is a field of information security that entails protection of one's own sensitive communications, as well as the interception and deciphering of communications of one's adversaries (Webopedia, no date). The work of cryptology can involve the recording, transcribing, translating, analyzing, and reporting of communications through various modes (About.com—U.S. Military, no date).

Cryptological linguists support the cryptological function through the understanding of foreign languages. They may, for example, provide summaries, transcriptions, or translations of foreign communications as part of reports prepared by intelligence analysts (U.S. Army, no date).

While cryptological linguists provide key contributions to the NSA's missions, other jobs and functions also require language capability. Language analysis is a unique career field at NSA/CSS, offering various career paths that encompass analytical, supervisory, and teaching assignments (NSA/CSS, 2009b). The major duties include translation, transcription, research and reporting, and placing research and analysis in an appropriate cultural context (Makingthedifference.org, no date).

Knowledge of a designated language is critical to successful performance of these jobs and activities. Currently, NSA/CSS seeks expertise for "line" openings in Asian and Middle Eastern languages, including African, Dari, Farsi, Korean, Mandarin Chinese, Pashto, Urdu, and Punjabi (NSA/CSS, 2009b). Applicants for NSA/CSS positions require a Top Secret clearance (NSA/CSS, 2009c).

Our interviews revealed further insights into the nature of work requiring linguistic capability.

NSA/CSS work requires a high degree of language proficiency. The language professionals we heard from told us that it takes 5–8 years to become fully capable to perform most NSA/CSS language missions. This results from a combination of the need for a high degree of language proficiency and the development of so-called "target knowledge."

Many positions at the NSA/CSS requiring language proficiency are rated as requiring 3/3 (general professional proficiency) or higher. However, debate exists over whether all such positions actually require this level of proficiency, given the type of information being collected and analyzed, the experience and motivation of the employee, and the availability of support and supervisory resources to assist the employee. Nonetheless, it is generally understood that high levels of language proficiency are preferable.

NSA/CSS work may require deep "target knowledge." The NSA's mission is worldwide and encompasses a variety of topics that can relate to national security concerns. Information collected may be analyzed to provide strategic or tactical information; e.g., to war planners and warfighters. In addition, NSA/CSS provides products and services to a variety of U.S. government agencies and allies and coalition partners (NSA/CSS, 2009d). Depending on the field of interest, substantial expertise may be required in professional and technical disciplines, such as computer science, mathematics, or computer engineering (NSA/CSS, 2009a). Moreover, certain areas of interest may require a thorough understanding of history, culture, economics, and prior experience with respect to a particular foreign adversary. In addition, language capability is primarily measured in terms of Defense Language Proficiency Test (DLPT) scores, but the DLPT is not target- or mission-specific, so it may not capture the range of language capability required for some missions.

Our interviews suggest that the preponderance of missions requiring language capability at NSA/CSS are moving away from ones that emphasize traditional military issues involving particular adversaries (e.g., monitoring military movements) toward ones that focus on broader issues involving many more transglobal actors and languages (e.g., tracking proliferation of nuclear material). Additional emphasis is being placed on development of long-term strategic understanding of emerging trends (e.g., advances in industrial capability in particular countries), along with near-term tactical concerns. Furthermore, materials for analysis are no longer primarily formal communications, such as formatted publications, but now also include less formal modes of communication. Finally, certain missions (e.g., counterterrorism) are particularly demanding and complex in nature. Therefore, demand is growing for individuals with high levels of both substantive expertise and linguistic capability. This may alter the importance placed on different categories of personnel who provide language capability in performing these functions.

With these considerations in mind, we now move to a discussion of the attributes of various categories of personnel in the NSA/CSS workforce who possess language capability. We begin first with a discussion of the role of contractors.

Role of Contractors

A major fact, pointed out by our interviewees and readily observable in the settings in which cryptological work is performed at NSA/CSS, is that the vast preponderance of personnel performing these functions requiring language capability are government civilians or military personnel. Contractors are relatively few.

In this part of the IC, cryptological intelligence work is viewed as inherently governmental and thus "exempt" from private-sector performance. The work qualifies as inherently governmental according to numerous criteria; e.g., it requires discretion and decisionmaking authority, "direction and control" of military forces, and unique military knowledge and skills. We were told that the requirement for a Top Secret clearance for employment at the NSA/CSS further reinforces the perception that the work performed there falls within the governmental domain. Contractors can obtain Top Secret clearances, but given that such clearance is not necessarily a requirement for employment with a contractor, the perception is that individuals who work for contracting organizations may be precluded from working for NSA/CSS.

Utilization of contractors at NSA/CSS occurs not as a first choice but instead as a response when the supply of civilian and military personnel is insufficient. Contractors may be turned to as a source of "surge" capacity, when additional personnel are needed quickly to meet workload. Contract linguists do not need to be trained—they are hired already trained—and the time needed to get them into the workplace may be relatively short if a contract is already in place with a commercial provider. NSA/CSS may also turn to contractors when specialized skills are needed; e.g., for performing translations in a particularly rare language, slang, or dialect. Interviewees said that contractors may be hired and fired relatively quickly; hence, they can provide flexibility to respond quickly to short-term and changing requirements. Related to this flexibility is the sense among some functional managers we interviewed that contractors have a strong performance incentive because there are clear consequences to substandard performance. Our interviews did not cover any of the specific procedures or policies that are involved in hiring or firing contractors.

Moreover, contractors possess certain performance and cost characteristics that may cause them to be viewed unfavorably by government personnel. For example, they are pre-

cluded from doing certain types of functions (e.g., analysis and quality control of others' work). They cannot supervise military and government civilians. And it is commonly believed that other limitations, such as security clearance eligibility or English language proficiency among heritage speakers, may diminish their ability to contribute as effectively to the mission of the organization. That said, some of these limitations may yield other advantages. Some functional managers said in interviews that because contractors do not have collateral duties, they can focus more of their attention and effort on the language mission. As mentioned earlier, NSA/CSS employs relatively few contractors to provide language capability, so it is unclear how relevant information regarding contractors garnered from the NSA/CSS is to other agencies and areas of the IC

For these reasons, we focus primarily in the remaining discussion on the issues that distinguish military personnel and government civilians who provide language capability in the cryptological community.

Role of Military Personnel

According to DoD guidelines, once an activity is deemed "inherently governmental," criteria further specify whether functions and responsibilities may be assigned to government civilian versus military personnel. Generally, the "default" category is civilian, unless exceptions indicate that military personnel are preferable.

Our interviews affirm the existence of such "exceptions" in characterizing the contributions of military personnel providing language capability at the NSA. Examples of functions in which military members with linguistic capability may predominate include the following:

- missions that require deployment, especially to an austere military environment or within a combat zone
- missions that entail operational risk
- short-notice assignments away from home
- functions that draw on military-specific knowledge and skills
- missions that directly support war planners and warfighters.

Military personnel contribute broadly to cryptologic linguist and language analysis functions across the NSA. There are, however, a number of characteristics of military personnel that govern the nature of their contributions.

First-Term Enlisted Personnel Comprise the Majority of Military Staff at NSA/CSS

All military services are represented at NSA/CSS headquarters and at NSA/CSS field sites. Most of the military personnel are enlisted personnel, with junior enlisted predominating; relatively few are officers. For many enlisted personnel, NSA/CSS is their first assignment after graduating from the Defense Language Institute and advanced cryptological training. Therefore, these individuals may arrive at the NSA/CSS lacking previous military or deployment experience that could contribute to performance of certain missions. Relative to other, more experienced or better educated personnel, they may possess more limited "world knowledge" useful for analysis tasks requiring synthesis and interpretation. For example, some interviewees said that young people with only a high school diploma—like the typical junior enlisted member—have only limited world knowledge, which can be a limitation in cases where the mission or target requires understanding of culture, history, and common practices and requires intuition based

on experience or exposure to different environments and customs. Lack of a college education may also mean that enlisted personnel have limited writing and analytic skills that are needed for some missions.

Furthermore, some interviewees stated that, because military personnel tend to be junior, they may require extensive supervision and mentoring to ensure successful performance. On the other hand, some interviewees stated that junior enlisted personnel who have completed training are obligated to complete their first enlistment contract, so managers can reliably count on military personnel to not attrite or leave NSA/CSS, at least until the end of their contract term or their rotation, whichever comes first.[2]

Military Personnel May Possess Insufficient Language Capability for Certain Missions

Earlier, we mentioned that many positions at NSA/CSS are rated 3/3 in required language capability. Military personnel assigned to NSA/CSS following graduation from the DLI may not meet these requirements; 2/2 is all that is required to qualify for graduation. Military personnel—junior and senior among them—assigned to DLIFLC after an operational assignment may or may not have maintained or enhanced their language skills, depending on the nature of the operational assignment. We were told that sometimes these personnel do not use their language skills while on an operational assignment, for a variety of reasons. For example, cryptologic linguists with a specific language (e.g., Korean) may be assigned to positions that require a different language (e.g., Arabic), so their language skills degrade. Also, some interviewees said that enlisted personnel are less adept with materials that are not formally formatted, use slang, and pertain to nontraditional missions. There is a perception among some of the interviewees that operational assignments often degrade language skills. Some stated that some military language professionals use their language skills regularly only while they are assigned at NSA/CSS but not when they have a military assignment, especially an operational one.

We also heard that, as military personnel become more senior, collateral duties and incentives for promotion diminish opportunities for maintaining and enhancing language capability, relative to opportunities to develop and enhance leadership and supervisory skills. Thus, while more senior military personnel at NSA/CSS may have better language skills, the job requirements of an E-6 or E-7 require that they supervise junior personnel who perform the language mission, rather than perform the language mission themselves. Consequently, some interviewees believed that NSA/CSS is not able to fully take advantage of the superior language skills of more senior military personnel who have the 5–8 years of service performing language that is deemed necessary to be fully mission capable. More generally, we heard from a number of interviewees that the military career path for language personnel does not optimize the use of language because, in general, those who have the least skill perform the language mission, while those who have the greatest skill do not.

An additional question that was raised in some interviews pertained to whether sufficient military personnel possess the "right" language skills. As indicated earlier, current requirements at NSA/CSS emphasize Asian and Middle Eastern languages. Military personnel are trained at DLIFLC in languages of importance to their respective services, which may reflect

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[2]   We have no data on attrition rates of military linguists at NSA/CSS, so we were unable to verify how their attrition differs from that of military personnel overall. That said, our tabulations of separation rates for the analysis in Chapter Four show that average work years are lower for enlisted military cryptological linguists than for enlisted personnel overall, suggesting higher, not lower, attrition rates. See Appendix C.

different priorities than the NSA/CSS's. For example, there may be insufficient military personnel to meet requirements in some specific or scarce languages in demand at NSA/CSS (e.g., Punjabi). In addition, our interviews revealed that the DLPT focuses on testing "global" language skills rather than language skills required for specific missions or targets. NSA/CSS language professionals, including military personnel, receive training at the NCS, which, among other things, provides military personnel as well as others with target-specific language skills. However, some interviewees said that time spent in continuing education at the NCS was also time taken away from performing "on-target," i.e., performing a specific mission.

Some interviewees noted the uniqueness of DLIFLC in providing a steady flow of trained military language professionals en mass. There is no real civilian counterpart to DLIFLC in terms of scale and breadth. There is also no civilian equivalent of Goodfellow Air Force Base, where many military personnel receive training in cryptology.

Tour Lengths Limit the Contributions of Military Personnel

Assignments at the NSA/CSS typically occur for 2–3 years for military personnel. In general, military personnel rotate between operational field assignments in their service and headquarters assignments, which can include the NSA/CSS—though this pattern varies by military service. While follow-on NSA/CSS assignments can occur, assignments in general are driven by the needs of the military service, and continued service at the NSA/CSS cannot be assured. The comings and goings of military personnel limit their ability to develop language capability and deep target knowledge. Depending on the nature of the intervening assignments and opportunities to maintain language proficiency, their language capability may degrade and require remediation if they receive a repeat assignment to the NSA/CSS. On the other hand, frequent rotations enable military personnel to gain a breadth, if not depth, of experience that can prove useful in NSA/CSS missions.

Military Tours at the NSA/CSS Contribute to the Military Mission

We also heard from interviewees that a tour at NSA/CSS benefits military personnel and, more broadly, the military's ability to perform its missions. Interviewees said that working at NSA/CSS enables military personnel to gain a better understanding of the national mission relative to what they gain from a more tactical operational mission, to gain additional training at the National Cryptologic School, to improve their language skills through greater usage, and to develop a network of contacts of "who to call" or "who to ask" at NSA/CSS when they return to their operational tours. Finally, tours at NSA/CSS also support the rotation base for deployed service members. An NSA/CSS tour is "shore duty," so to speak, and enables members to gain training, address personal readiness issues (such as dental readiness), and be with their families and friends. Thus, an additional role of military personnel is to provide a positive feedback on the military mission.

Together, these characteristics of military personnel, coupled with changes in the nature of work that enhance the importance of language capability, create challenges for developing and utilizing military personnel as part of the workforce mix.

Management of Military Language Professionals Could Be Improved

We heard numerous suggestions and comments for improvements in managing the careers of military personnel to optimize language use and capability. We heard that their careers need to more strongly emphasize the use and development of language capability and deemphasize the development and use of leadership and other skills that lead to promotion. Specifically, inter-

viewees suggested that military personnel need to explicitly focus on developing language skills throughout their careers, using language in every assignment rather than just assignments at NSA/CSS. Deployments can degrade language skills because those skills are often not used or maintained. Furthermore, personnel may be mismatched into assignments such that the required language skills in the assignment far exceed their capability, so they are unable to perform the mission effectively without additional investments in training or mentoring. Several interviewees suggested that military language professionals become warrant officers, so that their career development focuses on increased specialty proficiency, and even mid-career and senior personnel could provide language capability in addition to being supervisors and leaders. More generally, these interviewees suggested creating a career path for military language professionals that could deviate from the typical career profile for military personnel. In addition to the warrant officer idea, some interviewees suggested that language professionals, even enlisted personnel, be managed like a competitive category for service, such as is the case for pilots and chaplains, for example.

Role of Government Civilian Personnel

Government civilian personnel are found in a variety of jobs and functions requiring language capability at the NSA/CSS. Their roles can mirror those of military personnel and can compensate for some of their limitations. For example, while civilians may be less able to deploy to austere locations or take short-notice assignments, and may lack current military knowledge and experience, they possess additional attributes of value. According to our interviews, these can include the following:

- institutional knowledge and continuity
- deep technical expertise and/or deep target knowledge
- potentially, greater language capability and experience in using the language.

As with their military counterparts, however, interviews indicated that there are some additional key considerations that govern the nature of their contributions. These are discussed below.

Many Civilian Personnel Have Previous Military Experience

Previous experience is another key feature of the civilian workforce providing language capability at the NSA/CSS. NSA/CSS employees come from a variety of sources. Some are "fresh hires" from university language programs, while some transfer from other intelligence or defense agencies. Many of the latter, along with many new hires, are previously separated or retired military personnel who worked as cryptologic linguists in the military. Indeed, many received language training at the DLIFLC and held assignments at the NSA/CSS during their military career. Such prior military experience was considered particularly advantageous by some of the interviewees in missions and targets that required operational or military tactical knowledge. Because many civilian language professionals at NSA/CSS are prior-military personnel, especially those in assignments where such knowledge is valuable, some interviewees felt that military linguists were essential, if for no other reason than as a future source of civilian language professionals. In contrast, some interviewees said that those civilians who did not have previous military personnel were at a disadvantage for some operational missions because they had less familiarity and connection to the warfighter.

A related issue that was noted by some interviewees is the value of the military as a source of a large number of language professionals. Some argued that civilian sources of language capability provide only a "trickle" of personnel with the necessary security clearance. In their view, only the military, and specifically DLIFLC and subsequent cryptologic training such as at Goodfellow Air Force Base, provide large flows of language professionals to national security missions.

Civilian Personnel Are Typically Older and Have More Experience

In contrast to military personnel, civilians are typically older; have more experience, including experience at NSA/CSS; and typically have more education, such as a college degree, according to interviewees. This greater seniority and better education typically make civilians more productive at many missions and targets. Furthermore, mid-career and senior civilians continue to provide language capability, and their greater education and experience means they are likely to have not only greater language capability but also deeper target knowledge, a broader global perspective of culture and history relevant for some missions, and more extensive world knowledge and intuition based on exposure to different environments and customs. Some interviewees commented that while their greater job experience provided more depth in terms of target knowledge, civilians sometimes lack breadth of exposure to different missions and operational environments.

Nonetheless, government civilian personnel are often called upon for a variety of activities, including providing intelligence analysis summaries, report writing, and supervising and mentoring military personnel. Furthermore, because contractors are precluded from performing inherently governmental tasks, and their activities are dictated by the terms of their contracts, civilians are generally called upon to research, summarize, report, and perform a host of other miscellaneous activities. Some interviewees stated that these collateral activities detracted from their "time on target" and ability to provide language capability.

Hiring Constraints Limit the Availability of Government Civilians with Language Skills

The total number of available civilian positions at the NSA/CSS is established in congressional authorizations bills and may be further limited by appropriations provided by Congress for civilian salaries. Moreover, civilian positions are assigned to organizations within the NSA/CSS according to management priorities. Billets for civilian language and cryptologic analysts "compete" with billets for other civilian positions within overall limits; this may limit the availability of civilians with language skills in certain parts of the organization.

An additional constraint involves the hiring of government civilians at NSA/CSS field sites. These positions are also governed by allocation decisions made at headquarters and may result in a shortage of civilians with particular language skills at certain sites. That is, recruiting is centralized at the NSA/CSS headquarters level, and some interviewees at the field sites stated that they felt that centralization limited their flexibility to hire personnel locally that met their needs in a timely manner. Local hiring managers sometimes stated that additional flexibility in decisionmaking procedures could assist the hiring of civilians at local field sites. In addition, specific field sites may be unattractive to civilian employees with respect to geographic location, cost-of-living considerations, and so forth. For these reasons, the mix of military versus civilian personnel favors military personnel at the field sites relative to the headquarters.

Constraints on Personnel Management Affect Civilian Personnel

Our interviews identified constraints inherent in the government civilian workforce that can decrease management's flexibility in reassigning personnel and changing workforce composition to meet changing mission requirements. Rules governing personnel management can make it difficult to fill civilian positions in a timely manner or to discharge individuals with lack of cause, even if the language in which the individual is proficient is no longer in demand. Also, government employees' work hours are limited. Though many are fully dedicated and work extra hours on their own, budget may not exist to pay overtime; hence, supervisors may be reluctant to ask government civilians to work extra hours. Finally, government employees may not be moved arbitrarily across positions or forced to relocate.

Military personnel, on the other hand, can be redirected into different positions, sent away on short-notice assignments, and required to work extra hours as part of ordinary military regimen. For these reasons, they are often used to meet near-term needs and fill personnel gaps. Similarly, contractors in roles appropriate to them may be obtained quickly and can be discharged rapidly if their services are no longer needed. In a way, the constraints on the management of government civilian employees define the use of military personnel and contractors.

Summary

Our interviews provided a number of insights about the nature of work performed by language professionals, the contributions of different categories of language professionals to NSA/CSS, the contribution of NSA/CSS assignments of military personnel to the armed forces and their costs, the constraints on the use of different categories of personnel, and possible areas of improvement in their management.

Civilian personnel provide the "backbone" of the NSA/CSS workforce. On the whole, they offer the highest level of language proficiency and depth of target knowledge, particularly in topics requiring nonmilitary expertise, which are growing in importance. They play key roles as analysts and as supervisors. They potentially offer more continuity to the organization than any other category of personnel. For these reasons, a common sentiment expressed in our interviews was that "the NSA needs more civilians" providing language capability to NSA/CSS missions. This was particularly the case in some of the field sites.

Military personnel also bring unique advantages, particularly for those missions that require tactical military knowledge and understanding of the operational environment. They are unique in their ability to deploy and provide connectivity between military planners and warfighters and headquarters. While generally more junior and potentially somewhat less proficient at language, they contribute and can be successfully mentored and developed. Most importantly, perhaps, the military provides a mass quantity of linguists through the DLIFLC and serves as a "farm team" for subsequent civilian employment.

Contractors also bring unique advantages, particularly as they provide management flexibility in meeting changing skill requirements and supporting "surge" operations as temporary adjunct staff. Provided they can meet security requirements, they may also be viewed as a "farm team" for subsequent civilian employment. On the other hand, contractor support is limited to non–inherently governmental activities and those activities that can be and are stipulated in their contracts. Contractors do not receive training, so unless they have the requisite target-specific skills already, they are of limited use. Finally, contractors may be drawn

from among the U.S. foreign national population. Insofar as getting a security clearance is difficult for individuals from specific countries of origin or with certain background experiences, contractor support may limited.

In conclusion, the interviews provide extensive information about factors driving workforce mix considerations that are not easily amenable to measurement. However, the interviews yielded little quantitative information on the cost or on the benefits of different categories of personnel. For this reason, we also conducted a quantitative analysis of the relative cost of providing language proficiency of different categories of personnel. The results of the analysis are presented in the next chapter.