SMALL ARMS SURVEY

9

Occasional Paper No. 9

Demand, Stockpiles, and Social Controls: Small Arms in Yemen

By Derek B. Miller

May 2003

A publication
of the Small Arms Survey

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The Small Arms Survey

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About the author

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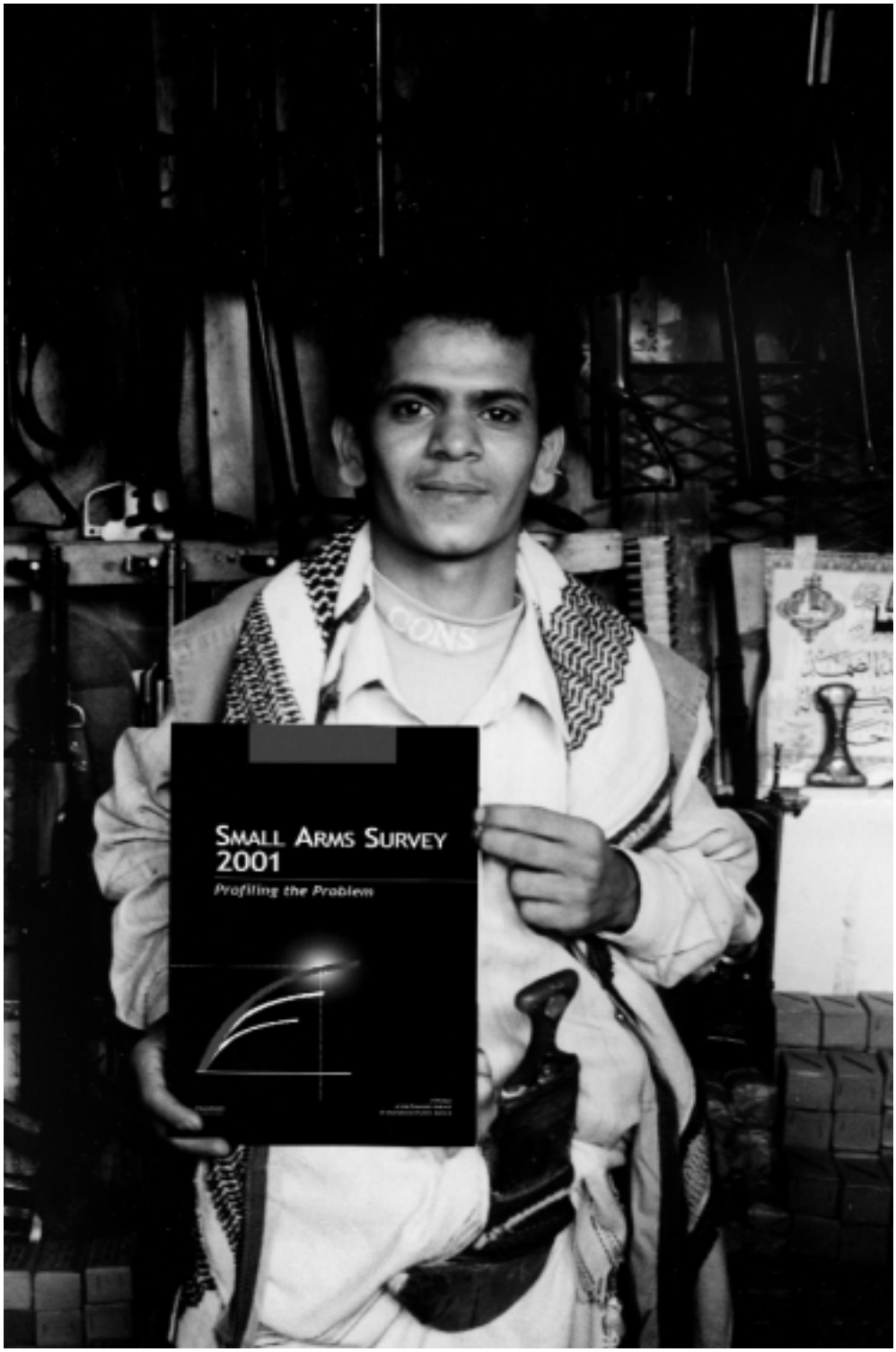
Acknowledgements

This paper would not have been possible without the assistance of many people. In no particular order, special thanks to Chris Eden at the American Institute for Yemeni Studies in Sana'a for advice, support, and hospitality; Bob Burrows at the University of Washington for the same; the staff of the World Bank in Sana'a for generating one set of small arms estimates; Khaled Ismail Al-Akwa'a at the Yemeni Ministry of Foreign Affairs for providing another; Chuck Schmidt at Towlan University for his historical insights; Bob Adolph at the UN Security Office in Sana'a for company and very practical support; Les Eden at Halliburton for his generous time and informed perspectives; Tobias Tunkel and the staff of the German Embassy in Yemen for sharing information and experience; numerous members of the Military Attaché Association from different countries who asked not to be mentioned by name but each of whom were inestimably helpful; Jacques Veerman and his Yemeni guests who all entertained questions, concerns, and helped produce another holdings estimate; Benjamin L. Inker for aid on statistics for the section on stockpiles and holdings; and to all my hosts in Dhamar who provided me with access to weapons, a shooting range, shops, and wonderful food and hospitality.

In Geneva, thanks to the staff at the Small Arms Survey for encouraging and supporting this project, particularly Kerstin Vignard and Elli Kytömäki who provided invaluable help with editing, fact-checking, structure, and clarity. In Jordan, thanks are due to Atef Odibat and David Jackman, as well as the many participants at the Demand Conference for Small Arms in the Middle East, hosted by the Regional Human Security Center, and the American Friends Service Committee.

Sections of this paper were authored by Professor David Warburton, an Egyptologist and Near Eastern Archæologist. He has taught Egyptian and Near Eastern Archæology at universities in Switzerland, China, and presently at Aarhus University in Denmark. His contributions are noted in the text and his insights were helpful throughout.

Atef Odibat, Aaron Karp, and Renaud Detalle reviewed this paper and provided detailed comments.



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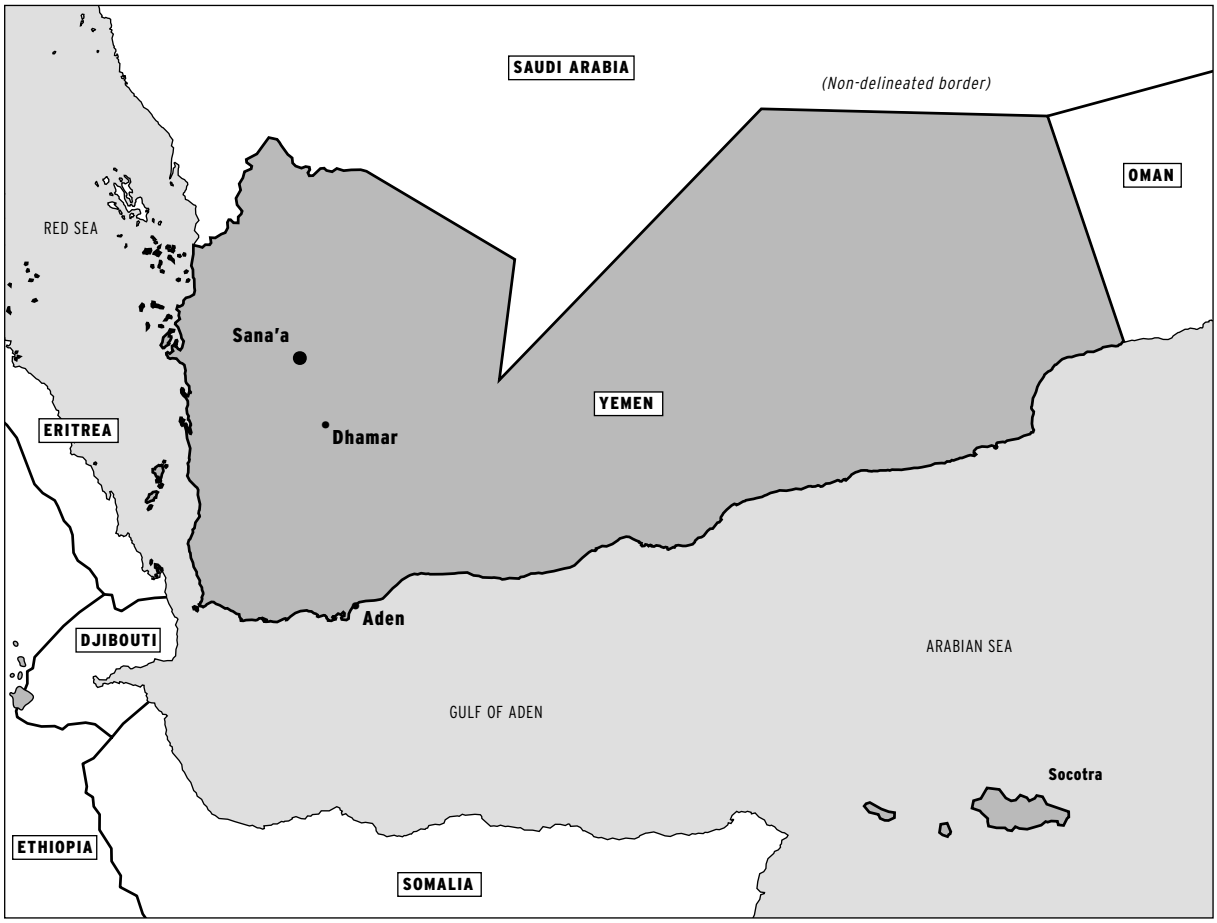
The Small Arms Survey conducts research in Yemen.

Map 1 Yemen and its neighbours



Summary

This paper draws strong conclusions about the dynamics of stockpiles and holdings, demand factors for small arms, and the significance of social controls on individual and community behaviour in Yemen.

Using a new method, devised uniquely for this study, to estimate small arms availability at the local level, it is believed that Yemen has between 6–9 million small arms, most of which are from the former Eastern Bloc countries or China, with fewer numbers of various makes and models from other countries, some dating back to the early nineteenth century. This dramatically reduces the popular estimate of Yemen having 50 million small arms. However, this revised estimate includes only an educated guess as to the actual number of weapons in state stockpiles, as well as those in the hands of tribal sheikhs. Though severely reduced, this new figure does not undermine Yemen's status as one of the world's most heavily armed societies, but certainly not the most armed, when one considers both per capita weaponry and their high level of lethality.[1]

The case of Yemen demonstrates that the demand for small arms is not an automatic or causal reaction to fears of insecurity, the effects of poverty, or even the politics of exclusion. Instead, evidence strongly suggests that the demand for small arms is grounded in local belief systems that are constitutive elements of political and social order. To understand the demand for weapons requires—both within Yemen and beyond its borders—an appreciation for the way in which people respond to structural problems, rather than an overemphasis on those structural problems themselves.

Methods developed here for understanding stockpiling practices demonstrate that weapons are accumulated in Yemen more for internally driven considerations than for rational calculations of differential power relations between groups (except in extreme cases of clear and present threats to community or personal life). Not all people, even within Yemen, are united in their appreciation of how many weapons (if any) makes one 'safe', and so the idea of 'surplus' is a highly elastic concept that is likely to be treated very differently around the world. This has major implications for definitional matters and the politics of control measures.

As regards social controls, this paper concludes that in Yemeni life, tribal rules of behaviour, more than civil or international law, are the main determinants of weapons possession, use, and the consequences of use. Informed but not overruled by the moderating influence of Islam (or, more specifically, Islamic law), tribal law proves to be a major socializing factor that governs the usually unwritten rules about intra- and inter-tribal relations regarding weapons use. Indeed, state law is considered largely ineffectual, and somehow antagonistic to tribal traditions, and therefore often scorned or ignored. Instruction for the future is largely derived from the past, where Yemenis seek principles for the perpetuation and stabilization of social life. This implies that researchers should not look to state law to understand the 'laws' that govern Yemeni life. It further implies that the location for understanding social rules of small arms use is in the lessons taught by fathers to their children, and the tribe to its members.

This approach to examining Yemeni life through local belief systems and matters of legitimacy in weapons possession and use goes to the heart of what arguments will resonate within the tribal regions. It is suggested here that:

- Coercive approaches to removing weapons from society could ultimately backfire, especially if the centralization of power is ascribed to foreign influence. Local legitimacy is a profoundly important principle, and without it, efforts at changing social practices will not be sustainable.
- Yemeni tribes, particularly in the north, are unlikely to disarm or consider changing weapons possession and use practices unless their cohesion, identity, and traditional forms of law can remain vital.
- There is a strong need to establish a respected and efficient judiciary with enforcement capacity that is harmonious with traditional tribal law.
- Unless security sector abuses can be curtailed, and the security sector becomes a trusted agent in tribal regions, there is almost no chance that tribal practices *vis-à-vis* the state can be improved.

Although focused on Yemen, this study's methodology and conclusions should prove applicable to a wide range of small arms research and useful to those developing policies on the control of small arms.

I. Introduction

A magnificent and ancient society[2] racked by a series of wars in the past half century, Yemen is suspected of having the highest per capita holdings of small arms in the world. Government officials and tribesmen alike nod, shrug, and sometimes smile when telling foreigners that their country is home to some 50 million small arms, the majority of which are fully automatic assault rifles. Using newly-developed techniques, a more accurate national holdings estimate has been found, which reduces the myth by over 80 per cent.[3]

This paper is based upon three questions:

- How many small arms and light weapons are in Yemen?
- What factors explain the demand for small arms and light weapons in Yemeni society?
- What accounts for the types of social violence that are associated with the availability and use of those weapons?

While this study was undertaken to specifically examine the case of Yemen, it is hoped that the methods employed to answer these questions may be useful and applicable to research in other countries and societies. This study is useful to specialists in topics other than disarmament, as its methodology cuts across perspectives and fields.

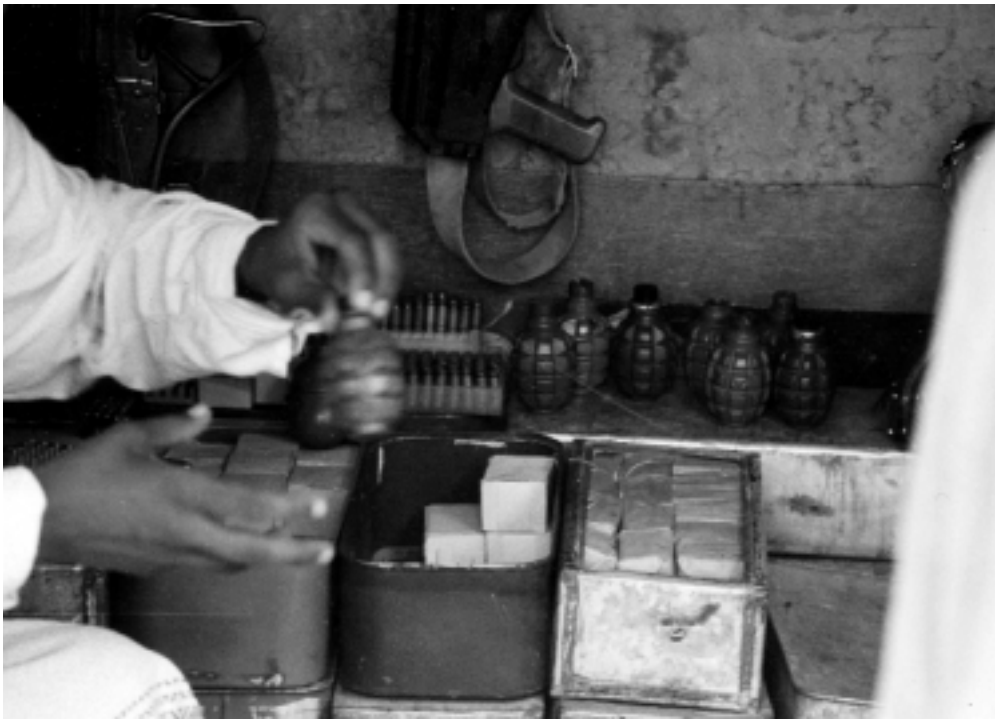
Section II describes the land and people of Yemen, including a brief history of the country, and a portrait of its security situation. It examines the myth that Yemen is the most weaponized country in the world and explores how weapons started to flow into Yemen.

Section III examines the matter of small arms stockpiles and national holdings in Yemen. It introduces a new procedure for using local knowledge of communal holdings to extrapolate a national holdings estimate. It further explains how stockpile estimates for countries are very different from global stockpile estimates, and why explicit definitions and formal models are necessary for understanding the relevance of the figures produced. It is argued that formal models of stockpiles and holdings are best created through the use of participatory research approaches that enable the main variables to be learned from the community itself, rather than presumed by the researcher. Specifically, Section III explains how focus groups, interviews, and participatory approaches can and should be used to understand the local reasons for demand. By understanding demand incentives, national holdings figures move from being 'just numbers' to being investigations into the values, institutions, and life of the community.

Section IV introduces a way of examining social controls over small arms possession and use while also addressing the complicated subject of small arms demand. This section examines Yemeni society through its structure of tribalism, analysing it in terms of the ideas that maintain communal identity and stability over time. Relying on fieldwork and regional studies about Arab and Muslim life, as well as scholastic work about law and warfare, the social institutions of Yemeni life are described, thus enabling the identification and explanation of the relationship between small arms demand, stockpiles, and social controls.

The conclusion points out that small arms possession and use in Yemen is governed by complex rules of social behaviour, rather than other factors, such as poverty or underdevelopment.

Yemeni men of all ages carry weapons, both daggers and rifles, as personal apparel and icons of masculinity.



Weapon sales from the back of a truck.

II. The context of Yemen and small arms

The land and its people

Yemen has a population of well over 18 million, which combined with the country's total area of 527,970 km^2, results in a density of about 30 persons per km^2. The northern parts of Yemen are most densely populated, leaving two-thirds of the land less inhabited.[4] In contrast to the nomadic traditions of other Arabian Peninsula inhabitants, Yemenis have long been settled in small agricultural communities. A full 76 per cent of people live in rural areas.[5] Because of its arid climatic conditions, high temperatures and drought, Yemen suffers from a shortage of natural resources. Fresh water is very limited.

Yemen reflects many contemporary trends of Islam. The population is divided into two principal Islamic groups: the Zaidi sect of the Shi'a, in the north and northwest, and the Shafa'i school of Sunni Muslims, in the south and south-east. Yemenis are mainly of Semitic origin, although many coastal inhabitants are of African heritage.[6]

Yemen boasts old and strong traditions. Weapons in Yemen are said to be part of the national character and more linked to heritage, tradition and norms than to violence and killing.[7] Tribes have been essential to the social structure of Yemen for thousands of years and remain so today. Tribal affiliation is particularly strong in the most populous northern parts of the country. Tribalism in the south was diluted by former British rule and the communist regime that followed independence in 1967, which condemned tribalism.[8] Typically, a tribe forms a political unit based on a specific region. It often has fixed borders, a known number of members and a certain amount of political autonomy when interacting with other tribes or the central government.

Most of Yemen's tribes have settled lives, supporting themselves with family-based farming of crops such as millet, sorghum, wheat, maize, qaat, coffee and bananas. Some earn their living as craftsmen, as carpetweavers or smiths, and an increasing number work as shopkeepers and tradesmen.

Administratively, Yemen is divided into 19 governorates, with the capital Sana'a forming a separate governorate. The president, who acts as head of state, is elected for five-year terms. Yemeni people also select 301 members of the unicameral House of Representatives. The main political parties are the General People's Congress and the Islamic Reform Grouping or Isiah party.[9] Recent developments suggest that the power of the central government is steadily increasing, as the state is replacing the tribe as the immediate object of political loyalty.[10]

Yemenis tend to refer to themselves as 'tribesmen'. The term 'tribesman', a translation of the Arabic word *Qabili* is preferred by English-speaking Yemenis. The gendered use of the term reflects the local cultural reality that women do not own or bear arms in Yemeni society. The northern tribal areas of Yemen are dominated by three major tribal groups, the Hashid, the Bakil, and the Madhhij, which together comprise close to thirty smaller tribes. In these mountainous areas, small arms are regularly carried by males over the age of fifteen.[11] This means that young men often own or carry fully-automatic assault rifles, though some prefer older models for various reasons including price, range, accuracy, and symbolic value.

The definition of small arms and light weapons used in this study was established in the *Report of the Panel of Governmental Experts on Small Arms*. The category of small arms includes revolvers and self-loading pistols, rifles and carbines, assault rifles, sub-machine guns, and light machine guns. Light weapons include heavy machine guns, hand-held under-barrel and mounted grenade launchers, portable anti-aircraft and anti-tank guns, recoilless rifles, portable launchers of anti-tank missile and rocket systems, portable launchers of anti-aircraft missile systems, and mortars of calibres of less than 100 mm.

Today, Yemen is rated near the bottom of the Human Development Index by the United Nations Development Programme (UNDP), as number 144 out of 173 countries (UNDP and Arab Fund for Economic and Social Development, 2002, p. 151) Adult literacy rates are low (46.3 per cent on average), and life expectancy is just over 60 years. It is also one of the poorest countries in the Arab world. The Gross Domestic Product per capita is USD 893 (2000) and unemployment hovers around 30 per cent.[12] This relative poverty is exacerbated by a skyrocketing population growth rate, estimated at between 3.38[13] and 4.17 per cent per year.[14]

Yemen's development indicators also fare poorly when compared with its Arab neighbours. It has the highest rate of birth among all Arab countries (7.6 births on average per woman; it is 3.5 in the Arab world and 2.7 globally), the lowest rate of 'elderly' (i.e. those over 65 years of age) at only three per cent, and the highest infant mortality rate in the Arab world (75.3 per 1,000).[15]

Yemen is located on the southwest corner of the Arabian Peninsula. It sits at the entrance to the strategic waterway of Bab al Mandeb, which controls access to and from the Indian Ocean and the Gulf of Aden to the Red Sea, and on to the Mediterranean through the Suez Canal. It has a coastline of 1,906km, and 1,746km of land border with Oman and Saudi Arabia, though the borders with its northern neighbour are still being charted following the 2000 agreement on demarcation with Saudi Arabia (Ain-al-Yaqeen, 2001; Arabic News.com, 2000).

Other than modest quantities of oil, Yemen suffers from limited natural resources. In 1987 oil production started in the Ma'rib area and by 1990 oil exports accounted for 91.1 per cent of total export earnings (Jane's Information Group, 2001, p. 859). Only three per cent of the land is arable, and despite having a land area of 527,970km^2, only 5,674km^2 is irrigated.

Yemen is not a significant geopolitical player in that it lacks a strong central state and an effective military, and is not capable of controlling many parts of its own territory—let alone projecting power beyond its shores. The end of the Cold War resulted in the loss of Soviet, then Russian, interest in Yemen, and no permanent foreign troops are stationed there. However, Yemen has become the focus of political (and media) attention as a result of recent events that may alter the country's political future and geopolitical position.

The first was the attack in the port of Aden on the US destroyer USS Cole in October 2000, carried out by two suicide bombers allegedly connected to Osama bin Laden's international terrorist network. The attack killed 17 US sailors and injured 39. The second event was the 11 September 2001 terrorist attacks on the United States. Edmund Hull, the US Ambassador in Yemen, stated that various individuals in Yemen are 'key cogs in the machine that makes the al Qaeda mechanism work' (*The Economist*, 2002a, pp. 39-40). It was believed that al Qaeda militants were operating with impunity on Yemeni territory, although it was uncertain whether this was through government support,

complicity, or powerlessness. Since 11 September 2001, accusations of terrorist activities in Yemen have continued. In July 2002, an explosion killed two al Qaeda operatives in Sana'a and led to the seizure of 650 pounds of plastic explosives. In December 2002, three American missionaries were killed in a southern Yemeni village, but it is unclear if the alleged killer, a local Islamist militant, had any links to al Qaeda. The president of Yemen, President Field Marshall Ali Abdallah Saleh, has condemned terrorist actions and sought aid from the US and other western governments to reduce al Qaeda's strength in Yemen.

The task will not be simple. During the 1994 civil war:

> President Saleh recruited Afghan veterans from across the Arab world to wage another victorious jihad against the Soviet-backed socialists of South Yemen. At its height, the Islamist network had its own school system, its own ministries, and even its own governorates, including Hadramawt, the bin Laden ancestral home. After the fall of the socialists in the south, the Islamists set about filling the vacuum with their own quasi-Taliban rule (*The Economist*, 2002a, pp. 39-40).

President Saleh has been seeking to stem the extreme Islamists by forbidding them to speak to the press and by issuing guidelines for Friday sermons. However, Yemen's stability is crafted by a negotiated agreement between the government and the regional tribes, and cemented by the vast arsenal of small arms in their possession. To chip away at that structure may be to threaten the foundations of Yemen's fragile peace.

The myth

Despite the apparent groundlessness of the estimate, it is widely reported in sources as disparate as *The Economist*, *Reuters*, *The Associated Press*, *The Yemen Times*, and *The Lonely Planet* travel guide that Yemen is awash with some 50 million small arms.[16] The number is now so common, and so embedded in the conventional wisdom and 'mystique' about Yemen that one may be forgiven for thinking it is obligatory to mention it in almost anything written about the country. It is interesting to note that although Yemen was a major consumer of small arms throughout the past decade, the mythic figure of 50 million small arms has never been revised.

The origin of the figure is unknown. Some commentators have noted that it was already in circulation as early as 1990.[17] Others claim that the estimate of 50 million weapons can be traced to a statement of a Yemeni official in 1992, a period of political unrest in Yemen and tense rivalry between political partners. 'It was an attempt by the socialist party to show that its political partner was not in control of the situation from the security point of view.'[18]

Regardless of its origins, there are several reasons for the durability and proliferation of this myth. One of the primary reasons is that for Yemeni tribesmen, the number is something of a source of national pride, and not one they feel a compulsion to reduce or refine. As explained in more detail in Section IV, small arms are not only instruments of defence, hunting, and offence, but they are also status symbols and vital tools for communicating social standing and helping to maintain community cohesion among tribal members and between tribes. Small arms are symbols of status, power, responsibility, manhood, and wealth. Tribesmen have few incentives to suggest they lack these qualities, and hence would not want to imply they are without the weapons that communicate them.[19]

Yemen is remarkably open compared with other countries in the region, and allows organizations such as The American Institute of Yemeni Studies and the Centre français d'archéologie et de sciences sociales de Sana'a (formerly the Centre français d'études yéménites) to host researchers with a great degree of relative autonomy. Nevertheless, the state maintains strict controls on the creation or release of what it considers to be sensitive information. The government does not have a tradition of encouraging the free exchange of information about the characteristics and social practices of the society as a whole if that information is deemed politically sensitive. Data from the government is generally unavailable on matters such as small arms stockpiles and national holdings, and such information may be of dubious reliability. Furthermore, Yemenis do not have a long history of recorded statistics.

Lastly, perhaps the myth endures due to the Yemeni government's embarrassment concerning its inability to control large swaths of territory. By accepting and encouraging a very high estimate of small arms, the government can defend its inability to control the entirety of its territory, as the higher the number, the more difficult it seems. However, this is not the case. There is no formula that determines how many small arms in the possession of hostile forces are necessary to deter actions by another party. The number of weapons or troops needed to accomplish a given task is contingent on a variety of factors over and above the number of available weapons. Such factors include (but are not limited to): war fighting doctrine; sophistication of war fighting tactics; terrain; training; readiness; troop morale; the level of willingness to suffer casualties to accomplish goals; and, of course, the same qualities in the opposing side. Yemeni officials do not need to exaggerate the number of weapons in Yemen to justify the difficulty of creating a modern state.

Yemenis are aware that the number 50 million seems rather high. The Director of the Centre of Information and Rehabilitation for Human Rights has taken a deductive approach to the question and, while not producing a figure, concludes that the number of 50 million 'proves exaggerated'. He estimates that youths under 15 are roughly 50 per cent of the population, and are roughly 50 per cent male. 'Hence the number of males able to carry weapons is no more than a quarter of the population, around 4 million and a half. And by dividing 50 million pieces of weapons by that number, we get 12 pieces of weapons for every person' (Izz Al-Din Said Al-Asbahy, 2002).

An official from the Ministry of Foreign Affairs provides an estimate of 15–16 million weapons and uses a similar logic. He estimated the population at 17 million, then removed 25 per cent of the population that was under 18 years old. Half of the 12.5 million people remaining were women. This left about 6.25 million men able (under cultural practice) to possess arms.

He then explained that:

> [N]ot all Yemenis carry or keep small weapons in their homes. The tribes located in the north and northeast are those who stock those kinds of weapons. The people in major cities, the coastal areas, central highlands, as well as in the south don't carry them usually. This means that the final figure of those who actually carry or stock small arms are about 3.5–4 million persons. If we put the unlikely estimate of three pieces per person, we reach a figure of about 12 million pieces in the hands of the public. A few million more are in the hands of the army and the security forces. It is therefore estimated that a total of about 15–16 million pieces are in Yemen.[20]

No one has ever counted the vast number of weapons on Yemen's territory, nor is such an activity feasible. The absence of hard data means that one must rely on deductive methods such as those used

by both sources above. Section III of the study further discusses Yemen's national holding of weapons and introduces a new method via which to estimate the growth of national holdings.

Arming Yemen

The import of weapons into Yemen is nearly as ancient as the country itself. Among the earliest weapons known in Yemen were a pike and a sword that came from Asia, probably India, during the first centuries (Breton and Bafaqih, 1993, pp. 52–58). The importation of small arms is closely tied to Yemen's colonial past and its occupiers.

The role of colonialism

When the first Europeans arrived in the sixteenth and seventeenth centuries, they found that both the Turks and the imam had artillery installed in fortifications to protect themselves. In the third-quarter of the sixteenth century, Ottoman preparations included bringing in 2,500 harquebuses (Serjeant and Lewcock, 1983, p. 71). In the seventeenth century the Ottomans could mobilize forces of 8,000–10,000 men. This was primarily because of opposition to their rule by revolts conducted by small armies of tribesmen who were also well armed with muskets (Brouwer, 1997, pp. 41, 43, 154–55, 179–200). The Portuguese and the Dutch were unable to establish themselves. The Turks were eventually expelled.

By the eighteenth century, gun barrels and stocks as well as gunpowder were being manufactured and sold in Sana'a (Serjeant and Lewcock, 1983, pp. 226b, 245a). In the nineteenth century, the possession of a matchlock was ordinary all across Arabia. One sheikh controlling a city and several villages could marshal an armed force of four thousand (Waterfield, 1968, pp. 25, 29). Imports continued apace, so that visitors to Yemen in the early twentieth century could encounter tribesmen bearing matchlocks alongside others with bolt-action breech loaders (Stark, 1953, photos between pp. 224–25). The best Arab matchlocks remained in use until quite recently. Some of these had barrels made in British India.

Just as the Ottomans had introduced thousands of harquebuses in the sixteenth century, the influx of modern weapons can be linked to the colonial powers. In 1839 the British established their colony in the port city of Aden, which sits at the strategically important Bab al Mandeb waterway. The initial preparations for the assault on Aden included 100,000 musket balls for 300 infantryman and artillerists (Waterfield, 1968, p. 72). The opposition's matchlocks proved inadequate, and the introduction of modern weapons began on a large scale. The British occupied Aden and its hinterland until 1967, but they did not fully control the rest of the country. The Ottomans re-established their control in the rest of Yemen.

After some discussion, Aden was given a civil administration (Waterfield, 1968, p. 113). Even four decades after the initial conquest, the local garrison consisted of one British and one Native Infantry regiment, supplemented by artillery, sappers, miners and cavalry (Hunter, 1968, p. 141). These various forces will have been equipped with official British weapons.

There were several reasons for the increase in the numbers of weapons in Yemen in the century and a half following the conquest of Aden. One was the presence of foreign troops in Yemen. Another was rivalry between the Ottomans, the Egyptians, the British, the French, and the Italians. A third was the technological developments in Europe. Together, these various factors resulted in a massive increase in the numbers of weapons in Yemen, although not necessarily a decisive and proportionate increase in the number of fatalities.

The most important single element in the history of the nineteenth century relevant to the present issue was the improvement of firearms. After the Napoleonic Wars, the percussion cap replaced the flintlock. This improvement was followed by the rifled barrel, the breech-loader, the repeater and the small-bore repeater. Between about 1820 and 1920, the armed forces of Europe, Japan, and America repeatedly replaced their military weapons, as each new technological advance meant that older weapons were discarded.

The existence and availability of large stocks of surplus weapons must be linked to the colonization of the world by the European powers. This led to increased trade activity at the same time that weapons that had been made for the express purpose of killing human beings were coming onto the market. Shippers in search of goods such as whales in the Indian Ocean could load surplus weapons into their holds and distribute these freely to the local populations. The possession of outdated military weapons by local populations was not a major concern to the colonial authorities as they themselves disposed of superior weaponry, which included machine guns before the end of the nineteenth century. By the time significant quantities of small-bore repeaters were available to the locals, the colonial administrations could also employ aircraft, and this was a preferred means of solving problems (Belhaven, 1955, p. 134).

Competition between the colonial powers was more significant than competition among the colonized peoples or between colonizers and colonized. The liberation struggles lay in the distant future. Small arms did not play a significant role for the imperial powers, whereas the surplus military weapons would come to play a significant role in the social life of the peoples on the edges of the empires, as in Papua New Guinea or Yemen. By the end of the nineteenth century, modern firearms were becoming common among members of societies without strong states.

Box 1 Weapons in Yemen: Where did they come from?

This box is based on fieldwork in Yemen and observation of weapons, their use, and tribal activity conducted by David Warburton (Warburton, 1993). The surveys conducted cannot be representative of the weapons in Yemen, however, the author was in most parts of the country and unless pockets of the country are significantly different, the following may be a reasonable sample of weapons in Yemen.[21]

Early imports observed from Europe included: Mauser 87 (Ottoman Empire); Mauser 98k (Germany/Ottoman Empire); Enfield, Snider, Lee Enfield, Martini-Henry (Britain); Lebel (France); Vetterli's, M1 (Italy); Mannlicher's, (Austria); and Remington (of Scandinavian origin). It would not be an exaggeration to suggest that virtually every type of musket or rifle developed in Europe after 1850 could be found somewhere in Yemen. This paper deals only with the earliest period. There were three initial sources of weapons in Yemen: colonial presence, major power rivalry, and trade.

The earliest modern European military small arms to enter the market in Yemen were probably British products, of which the 1853 Enfield, Snider and Martini-Henry were probably the earliest. The weapons observed were official British versions and generally appeared to be carbines (Enfield, Snider) rather than rifle-size, so it can be concluded they originally belonged to the garrison at Aden, entering the market either illicitly or after being mustered out. It may be assumed that the garrison troops in Aden may not have had the modern equipment available, and thus the Enfields may date to a period after the introduction of the Martini-Henry, and these, in turn, might date to a period after they had been removed from ordinary British front-line

infantry divisions. However, the weapons still present today represent a continuous series, as issued to the Colonial forces and constantly replaced. At the end of the British presence, the troops were equipped with standard British Army issue FN FALs. The introduction of the Lee Enfield must have likewise occurred before the British Army discarded them.

The armament was thus gradually modernized throughout the course of British rule. The actual number of small arms introduced in this fashion was not significant. None of these weapons are abundantly visible today. As a series, however, the British weapons are the most continuous and consistent. One can link their presence to the history of South Yemen.

Although the Lee Enfields and FN FALs are still widely used, the British contribution cannot have been significant to the total number of weapons in Yemen. These weapons are appreciated for their reliability and quality, and therefore kept. But the numbers are not high in relative terms.

The Ottoman forces in North Yemen were far more significant. It was a military occupation and in a constant state of war with the tribes and the imam. The Mausers in Yemen today are almost all Ottoman, and represented the continuous re-equipment of the Ottoman forces throughout their occupation. The Ottoman occupation forces were issued the standard Ottoman Mausers on a large scale. These are among the most common weapons in Yemen, and almost all are still used today. Some are in the hands of youths whose parents have acquired more modern weapons. If they are prized, it is because they represent the owner's first token of manhood, and not because of any intrinsic value in the gun.

One of the most common weapons in Yemen is the French Gras. There are both modified Chassepot and original Gras rifles. This is significant because the French never had a major presence in Yemen, and other French weapons are conspicuous by their absence or scarcity. (The author has never seen a Chassepot in Yemen, and only saw one Lebel).

Some of the Gras rifles were introduced into Yemen through the British colonial administration in Aden, who purchased them from France and turned them over to local levies in the 1930s. However, it is highly probable that the decision to purchase the Gras was decisively influenced by conditions before the purchase. Gras rifles were already present in large numbers, and with adequate quantities of cartridges and bayonets, before the British brought in more.

The other weapons represent a cross-section of the arms trade at the end of the nineteenth and beginning of the twentieth century: German Mausers, Austrian Mannlichers, Scandinavian Remingtons, and an Italian M1. Original American weapons were rare or unknown in Yemen: the Remingtons and M1's noted by the author were not American, but variants manufactured under license. It would appear that this was primarily a European trade.

The largest quantities of weapons were imported officially by the British and Ottomans to equip their forces. Smaller quantities of diverse arms were brought in to stir up the hornets' nests (French, Italian). Inevitably, the French and Italian weapons can be linked to imperial interests and great power rivalry (especially after the occupation of Perim and Djibouti, etc.). In general, these weapons were not conceived as part of a major programme, but inevitably, each power will have sought to curry favour with various tribal groupings through the gift of insignificant quantities of weapons. The other weapons were simply part of ordinary commerce and smuggling.

Source: Warburton (2003)

Modern transfers

After gaining independence, following the collapse of Ottoman empire in the First World War, Northern Yemen drifted into economic stagnation. The weapons situation in the country deteriorated. Southern Yemen was driven to a conflict with its British mother-state between 1918–34 over a dispute over the status of Aden and Hadramawt. Division of the country together with regional politics help explain Yemen's situation.

After the Second World War, in 1955, the Soviet Union began conventional arms transfers to Egypt via Czechoslovakia to influence Egyptian attitudes towards the USSR. The following year, Egyptian President Nasser nationalized the Suez Canal, leading to the 1956 war with France, Israel, and Britain. After the intervention of the United States, the canal re-opened to shipping, and the warring countries returned to their territories. Yemen was key to the southern control of the Suez and through the support of Nasser's regime, the Soviets were able to influence the future of Yemen.

In 1962, Muhammed al-Badr inherited North Yemen from his father, Imam Ahmad Yayha. One week later he was overthrown in a coup by a group of officers led by Colonel Abdullah al-Sallal, who declared the northern region the 'Yemen Arab Republic' (hereafter 'North Yemen') and thereby touched off a civil war across Yemen. The deposed young imam solicited aid from the Saudis, who had no interest in a republic forming on their undefined borders. These 'royalists' were backed by Saudi Arabia and the UK, while the 'republicans' were supported by the regimes of Egypt, Syria, and Iraq. In response to the republicans' requests for aid, Egypt sent army troops. Although Nasser and King Faisal of Saudi Arabia met in 1965 to halt the civil war, clashes resumed in 1966.

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On 30 November 1967 the British relinquished control of Aden and the South and pulled out. Almost immediately, the People's Republic of South Yemen (hereafter 'South Yemen') was established, which was Communist-oriented and based in Aden. Fearing retribution, '[t]housands of south Yemenis fled north into the Yemen Arab Republic and into Saudi Arabia. Some of the sheikhs of the south had rallied against the new quasi-Communist government, and as tribal affiliations were strong and collective punishment common, the exodus was largely based on political alignments. Raids began from the north into the south thereafter and found support from King Faisal in Riyadh, who 'had been alarmed by the appearance of a radical regime on his southern border.' These raiders were armed with US weapons as early as 1968, supplied directly by the Americans (Page, 1985, p. 19).

Upon the British withdrawal from Aden, the Soviets started to inject massive military and technical aid into South Yemen. Following Soviet inroads into South Yemen, the Soviets immediately started building a complex military and industrial infrastructure in the area around Aden. Their long-range bombers needed interceptor aircraft support, reliable oil reserves, roads, airfields, technical equipment, and housing for Russian aviators and soldiers.[22]

Soviet weapons probably began to arrive directly (as opposed to transfer by third parties such as the Egyptians) in mid-March 1968 when two ships which arrived in Aden with Soviet arms were diverted to the north. This shipment was followed by another small one a few months later (Page, 1985, p. 16). Such small shipments were probably more symbolic than designed to create a genuine military capacity in South Yemen. However, Soviet involvement would soon escalate, and the Soviets would remain in Yemen until the end of the Cold War.

Chinese weapons may well have found their way into Yemen from the unguarded Omani border to the northeast, while Yemen was also used as a transit point for shipment elsewhere. The Dhofari rebellion in Oman began in 1965 to overthrow the oppressive rule of Sultan Said ibn Taimur. At the end of 1967 it started to receive Chinese support. Soon after, Beijing and Aden (the capital of South Yemen) started to collaborate. The Chinese sent small arms to the Yemeni border, where they were shipped over to the Omanis in Dhofar (Page, 1985, pp. 125–27; Behbehani, 1981, pp. 176–86). Vying for position on the peninsula, both the Soviets and the Chinese also supplied arms to the Omanis in the renamed Popular Front for the Liberation of the Occupied Arab Gulf or PFLOAG. In 1972, the Cubans started sending officers to train PFLOAG units in South Yemen (Page, 1985, p. 130).

The civil war in the north came to an end only when the Six Day War in 1967 forced Egyptian troops to depart from Yemen. Colonel Abdullah al-Sallal (then president of the Yemen Arab Republic) was exiled to Iraq, and the Yemen Arab Republic was recognized by Saudi Arabia in 1970.

Divided into the Yemen Arab Republic in the north and Communist People's Democratic Republic of Yemen (as renamed in 1970) in the south, the two 'states' saw continued conflict throughout the 1970s and 1980s, including border wars in 1972, 1978, and 1979.

As with other former Soviet client states like Cuba and North Korea, South Yemen was doomed to suffer from the end of the Cold War. Support immediately dried up, and arms no longer flowed to the country.

After some ten years of negotiation and hostility, the north and the south unified on 22 May 1990 under Saleh, but the integration of the country and the military went slowly and was largely unsuccessful. In 1994, the country erupted into a full-scale civil war fought by the regular armies of each former state with some tribal support on each side. It is believed that President Saleh—whose military was not capable of conquering the south—was able to do so only by bargaining with the tribes. The northern tribes were allowed to loot and keep the entire stockpiles of the former southern army. When the south fell to the north, most of the vast Soviet stockpiles of small arms 'disappeared'.The civil war resulted in wide proliferation of weapons. The army was unable to completely confiscate the post-conflict surplus, which was largely distributed to citizens in various areas and villages of the country (Al Dailami 2002, p. 85).

Although historical knowledge of material aid to Yemen and surrounding countries, military action and support in the context of the Cold War, along with Communist expansion, are helpful for explaining the presence of the different types of weapons seen in markets and on men's shoulders, it tells us very little about the quantity of weapons in Yemen today.

Yemen does not legally produce small arms and so nearly all available weapons—except for early models from the eighteenth and nineteenth centuries when Yemen was a producer—have been imported. In recent years Yemen has received small arms from countries such as Argentina, Brazil, China, the Czech Republic, France, Germany, the Philippines, Poland, Portugal, South Africa, Spain, and the United States. In turn, Yemen is probably a supplier of arms to the Horn of Africa, including Djibouti, Somalia, and Sudan.

Table 1. Small arms transfers to Yemen, 1996–2000
(in current US dollars)

Custom code*	Exporter	1996	1997	1998	1999	2000	Total
930100	Poland	6,619,000	3,466,000	761,000	1,917,000		12,763,000
	South Africa				354,000		354,000
	China			424,000			424,000
	Total	6,619,000	3,466,000	1,185,000	2,271,000	0	13,541,000
930200	Czech Rep.			25,000	427,000	3,000	455,000
	Spain		643,000				643,000
	Poland	918,000		499,000	290,000		1,707,000
	Argentina	80,000					80,000
	Total	998,000	643,000	524,000	717,000	3,000	2,885,000
930330	Germany	1,390,000	1,204,000	5,000			2,599,000
	Czech Rep.	3,507,000	3,074,000	3,374,000	2,053,000		12,008,000
	France	101,000					101,000
	Philippines			390,000		26,000	416,000
	Brazil		260,000			447,000	707,000
	Total	4,998,000	4,538,000	3,769,000	2,053,000	473,000	15,831,000
930390	USA				50,000		50,000
	Czech Rep.	102,000					102,000
	Total	102,000	0	0	50,000	0	152,000
930510	Germany	57,000	25,000				82,000
	Total	57,000	25,000				82,000
930590	Switzerland		9,000		241,000		250,000
	Poland	220,000					220,000
	Total	220,000	9,000	0	241,000	0	470,000
930621	Czech Rep.	174,000		4,000	89,000		267,000
	Poland				525,000		525,000
	Total	174,000	0	4,000	614,000	0	792,000
930630	USA	101,000	40,000				141,000
	UK	181,000	193,000				374,000
	Russian Fed.					111,000	111,000
	Germany	1,257,000	1,735,000	711,000		443,000	4,146,000
	Czech Rep.					249,000	249,000
	China			2,987,000			2,987,000
	South Africa				118,000		118,000
	Brazil	216,000					216,000
	Philippines		61,000		390,000	455,000	906,000
	Total	1,755,000	2,029,000	3,698,000	508,000	1,258,000	9,248,000
930690	China			5,341,000			5,341,000
	Portugal	664,000	763,000				1,427,000
	Total	664,000	763,000	5,341,000	0	0	6,768,000
930700	Iran					240,000	240,000
	Total	0	0	0	0	240,000	240,000
Grand total		**15,587,000**	**11,473,000**	**14,521,000**	**6,454,000**	**1,974,000**	**50,009,000**

Source: UN (2001)

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*Small arms and light weapons, COMTRADE customs codes

Code	Description
930100	Military weapons other than revolvers and pistols
930200	Revolvers and pistols
930330	Rifles, sporting, hunting or target shooting
930390	Firearms and similar devices operated by the firing of an explosive charge
930510	Parts and accessories of revolvers and pistols
930590	Parts and accessories not elsewhere specified
930621	Cartridges, shotgun
930630	Small arms ammunition (cartridges and parts thereof)
930690	Munitions of war and parts thereof and other ammunition, and projectiles and parts thereof
930700	Swords, cutlasses, bayonets, lances and sim arms and parts, scabbards and sheaths

Information on recent transfers voluntarily submitted to the United Nations COMTRADE database is extremely helpful in identifying the modern suppliers of small arms to Yemen, and may tell us something about the rate of consumption of weapons in the country (see Table 1).[23] Not all small arms transfers to Yemen are reported to UN COMTRADE, and no systematic or reliable information about illicit (or covert) transfers to Yemen from governmental or non-governmental sources is available.

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With an understanding of the reasons for historical transfers to Yemen, a reasonable list of known suppliers, and some empirical data on known transfers to Yemen, it is now possible to make a deductive analysis about national holdings.

III. Stockpiles and national holdings[24]

The *Small Arms Survey 2002* estimates that the global stockpile of small arms is about 640 million (Small Arms Survey, 2002, p. 63). However, the matter of generating estimates for communities, states, or regions is a rather different task from that of creating a global estimate, and one that has not received a great deal of systematic attention in countries that lack a central register of weapons. Global stockpile estimates rely on the fact that after accounting for weapons destruction programmes and attrition of weapons, all weapons produced and once owned by militaries and civilians are still somewhere in circulation.[25] Sub-global estimates (at the national or regional level) cannot make a similar assumption, as weapons move in and out of communities and across borders.

In order to better appreciate the problems associated with producing a national estimate for Yemen, this section discusses the definitions and concepts associated with sub-global stockpile or holdings estimates. The formal models proposed cannot be used for the Yemeni case because the data is not presently available. However, this section should be of great use to those concerned with creating community stockpile or holdings estimates and understanding transfer dynamics. Additionally, one can more clearly appreciate that national holdings are dynamic and complex systems rather than static and sedentary piles of guns. The section ends by introducing a new way of estimating Yemen's national small arms holdings and by setting out questions related to local arms customs.

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Definitions of stockpiles and national stockpiles holdings

What is a small arms stockpile? Stockpiles may be defined as those small arms and light weapons in the recognized possession and effective control of authorized state institutions or organs. Generally speaking, weapons stockpiles are those weapons in the hands of the military, law enforcement, and paramilitary organizations of a state, although these terms and the differences among them are unclear in many states, and at other times may not be applicable at all.[26]

The idea of 'recognized possession' is important because possession of an item can be contested rhetorically, legally, or physically. For example, during a war situation a weapons depot (i.e. an actual storage facility) changes possession due to the capture of enemy territory. Later the depot is captured and controlled by a third party. The two original adversaries might refer to the depot as their own. This is a rhetorical contest. If the hostilities end, and ownership of the depot of weapons is somehow subject to legal arbitration or ruling, then possession becomes a legal contest. If two armies battle for a weapons depot, it is a physical contest.

Continuing with the example of the weapons depot, 'effective control' refers to the actual capability of an institution to direct the operational status of the depot. This means that the institution is able to exercise its will over how that depot of weapons will be used. In the absence of this capacity, effective control cannot be assumed. When recognized possession and effective control are lacking, a cache of weapons is usually not included in measures of a state's stockpiles.

'Authorized state institutions' is also an important definitional aspect because anecdotal evidence is widely available of state officials acting independently (i.e. without state sanction) to sell or transfer

weapons against the will, or without the knowledge, of higher state authorities. Such rogue activities would place a given depot outside of state control. However, such distinctions are complex because one must determine whether the allegedly rogue agent acted on behalf of the state itself.

The term 'stockpiles' is used as a sub-set of the broader term 'national holdings'. National holdings are all weapons in the territory of a state. These weapons may be in military, government, or civilian possession, and the term covers even those weapons which are lost or not in the possession of any actor. Thus, the weapons are 'possessed' by the land rather than by the people who live there.

The importance of drawing a distinction between stockpiles and national holdings is centred on assessing accountability and, by extension, responsibility in matters of transfers or violence. It is also necessary for creating estimates of regional holdings.

The ratio of state stockpiles to national holdings more generally (or else subtracting state stockpiles from national holdings figures) tells us a great deal about the accessibility and distribution of weapons within a state. Further examinations into the social distribution pattern of weapons (such as by gender, age, social class, tribe, and so on) along with the type of weapons generally possessed (pistols, rifles, etc.) create a portrait of the number, type, and geographical distribution of weapons within a state. This information is useful when determining when and under what circumstances violent acts tend to take place, and allows for the identification of patterns of violent acts by some segments of a community against others. In turn, this data can be used to define 'in-groups' and 'out-groups' to understand how different segments of a community are armed *vis-à-vis* one another, thereby making analyses of trends and of the logic behind violent acts possible.

The number of weapons in a country is, in principle, determined by accounting for the weapons possessed by the military, law enforcement, civilians, and insurgents or non-state actors, and those lost or not held by anyone (see Figure 1).

Figure 1 The national holdings formula

+	Law enforcement/other government security force weapons
+	Civilian weapons
+	Insurgency group weapons
+	Lost weapons
=	National holdings estimate

Although a national holdings estimate could be subdivided into other categories, this five-tiered system is helpful because each of the four classes of actors who possess weapons do so with different types and levels of state authorization and sanction. As states are deemed the legitimate actor in international relations, it is on the basis of state law that rights of possession—and, in most cases, actual possession and use—can be assessed.

National holdings, however, are not static because states transfer weapons in and out of the country. The same can be said for sub-state actors (such as cantons, governorates, or villages). As all communities have borders (whether explicitly defined or not), and because no border is completely secure,

communities are effectively 'open sets'. The only community that is not an open set is all of humanity collectively. That means that the issues raised below are not only important for generating a global stockpile estimate, but are also vital in generating any other type of sub-global estimate, such as the one for Yemen.

A reasonable way to illustrate national holdings is a bucket of water (Figure 2). The amount of water in the bucket constitutes the holdings volume at any given moment. The bucket has two hoses: one that feeds water into the bucket and one that drains the water out.

In an open set, one hose feeds weapons into the bucket, thereby increasing national holdings (i.e. the number of weapons in a country). Weapons are added through the mechanisms of domestic production (for those states with domestic arms manufacturing), and by the receipt of small arms transfers from other states or actors on an authorized or unauthorized basis.

Another hose draws weapons out of the bucket, thereby decreasing national holdings. The number of weapons decreases for many reasons: attrition and permanent failure due to damage or loss; transfers out of the country on an authorized or unauthorized basis; and through domestic weapons destruction programmes. The first category is complicated by the fact that damaged weapons can often be repaired, thereby reintroducing the weapon into circulation and hence into the holdings estimate.[27]

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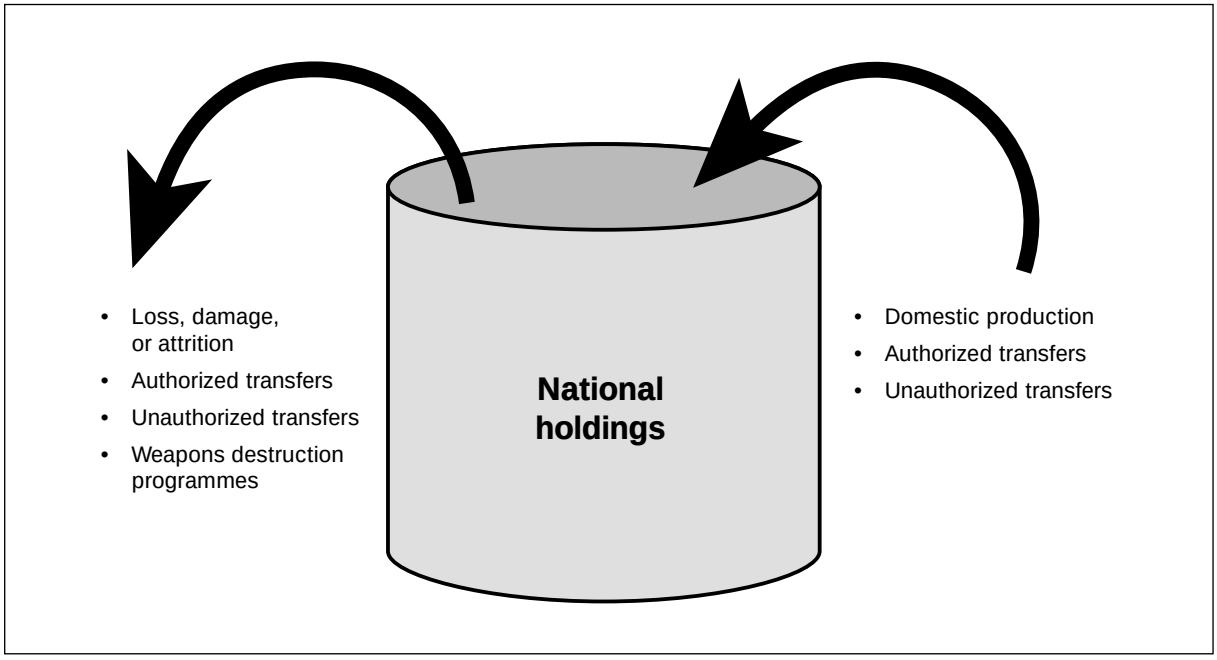
Figure 2 The bucket metaphor



Initial national holdings estimates, increases to holdings, and decreases from holdings are therefore three separate categories that can be calculated (given proper information) to provide a momentary estimate of a nation's holdings (initial national holdings + increases – decreases = estimated national holdings). Due to continuous military training, weapons use by different segments of the population, transfers of numerous varieties, and possible destruction or loss, it is accurate to view all numbers of national holdings figures as floating estimates with measurable ranges of volatility.

Were the information available, it would be necessary to consult the following types of sources to create initial estimates:

- State reports on stockpiles;
- State records of civilian holdings by licences or sales;
- Company reports on production rates and volumes;
- Customs and/or arms export/import reports; and
- Estimates of attrition rates (based on the types and numbers of weapons in circulation) and of levels of spare parts purchasing for those weapons to calculate approximately how many weapons within a state are actually functioning.

Such material, however, has never been compiled for even the most transparent state, and the obstacles for gathering such information are significant. Formal models based on deduction derived from thorough ethnographic study of local practices remain the best means of determining the numbers, distribution, and movement patterns of weapons in a particular country or society.

Box 2 Attrition rates

Attrition refers to the rate at which weapons degrade through use to become effectively useless until and unless they are repaired, and through permanent loss or damage.

When producing a stockpile or holdings estimate for a community it is helpful to know:

- How many weapons are likely to be rendered useless over a period of time as a function of permanent loss or permanent (i.e. irreparable) damage; and
- How many weapons are temporarily useless as a function of lack of ammunition or else need of repair.

There is a great need for this information as it serves as one element of a simple formula:

Total weapons = (produced + in circulation) – out of circulation

At present, production figures are reasonably well estimated (Small Arms Survey, 2002, ch. 1), and global circulation figures are estimated as well. What is unknown, however, is how many of these weapons are now out of circulation permanently due to loss or damage.[28] Nor is there a useful formula for estimating the readiness of weapons in a given locality.

Many of the world's conflicts take place in countries without domestic production of small arms. Furthermore, many of the actors are non-state actors have limited or no production capability, and have generally unreliable access to new weapons, parts, repair expertise, and ammunition.

Consequently, the total number of weapons in a given locality may be less relevant from the vantage point of the harm they can be used to cause than the number of useable weapons. In places without access to spare parts or the craftsmanship to make use of them, weapons break and stay broken. Though small arms are built to last and assault rifles are often extremely durable, no weapon will last forever if it is regularly used. What remains is to find a means of measuring this attrition rate.

This is a first attempt to identify the key variables, and then to relate them to each other as a formula. As data becomes available from field research, actual numbers can then be inserted into the formulas to produce estimates.

Weapon reliability is a function of five factors (Allsop *et al.*, 1997, p. 33):

- operations without mechanical failure;
- service life;
- maintainability;
- reparability; and
- readiness.

> [T]he number of shots fired by the weapon, rather than an operating time is the usual operating unit for conventional weapons. Thus the number of rounds fired gives the service life. An average time between failures, t, is determined from the average number of rounds between failures, nf, and average daily (i.e. 24 referring to the number of hours in a day) ammunition expenditure, nd (Allsop *et al.*, 1997, p. 33).

Thus:

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$t=24(nf/nd)$

Furthermore the *readiness coefficient* (Kr) takes into account the mean time for repair (tp), so that:

$Kr=t/(t+tp)$

This information is for individual weapons. To produce a formula for the community level it is necessary to account more specifically for the variables that affect the mean time of repair. Therefore, community holdings estimates are a function of:

- Access to spare parts (s)—a function of the efficacy of border controls, corruption of state officials and stockpile managers, and other factors;
- Access to repair knowledge (k)—perhaps determinable only through intelligence information about an actor;
- Access to repair equipment (e); and
- Demonstrable preference for repairing weapons rather than replacing them (p)—based on cost-benefit or other assessments.

As a consequence of these variables, actors will either choose to repair weapons or replace them based on a consideration that takes into account cost, access to new equipment, and difficulty of repair.

At present, a specific formula is not being suggested. However, progress may be made by working with specialists in military science who assess the readiness levels of competing militaries, especially tank divisions and artillery divisions, which are both subject to highly similar concerns and field use.

Measurement types and formal models

A formal model puts observations about the world into a fixed set of logical relations, so that if one or more observations about that world changes, new information about the overall relationship can be generated almost immediately.

The field of economics, as well as political science to a lesser extent, uses formal modelling to understand and map the relationships between very complex interactions in the social world. The purpose is to be explicit about how these phenomena relate to each other for the benefit of clarity. In doing so, the relations become 'formalized', which is not to say they cannot be altered and adapted as new information is learned.

The use of the four measures presented below—and potentially many others—should enhance understanding of how and why certain unpredictable outcomes result from even the best efforts to understand and affect national holdings (such as limiting or controlling transfers, or engaging in weapons collection programmes). Although these measures cannot produce estimates if the empirical data needed to complete the formulas is unavailable, they place phenomena in a formal set of relations to one another and should advance our understanding of state, sub-state and regional estimates.

In any place one chooses to count weapons, those weapons can be exported and others imported, thereby affecting the count. All environments where this movement of weapons is possible are open sets. Any open set under study, such as a village, a state, or a region of the world, becomes the 'zone of interest'. For example, if one is interested in how many weapons are in Yemen, the state's borders or frontiers define the zone of interest.

In any open-set analysis—which effectively means any study other than global estimates—the analysis of state stockpiles or holdings necessitates the use of a *time series average*. As previously mentioned, because of the movement of weapons into and out of the zone of interest, any estimate will be a temporary estimate. It is therefore important to determine what period of time will be examined to create the estimate. The period of time selected is based entirely on the researcher's needs, and could range, for example, from one week to one decade. Once the time series average has been determined, it is possible (given sufficient data) to compute other measures that are useful individually or in concert.

One major concern is volatility. Some zones of interest will prove to be highly stable in their volumes estimates over a period of time, and others will demonstrate massive changes. The extent of the changes in the average over time is its *average deviation*.

Conceptually, the average deviation of an average holdings estimate works in the following manner. If a zone of interest has a yearly average of 100 small arms in its national holdings, and a weapons collection programme collects 20 weapons, it may at first appear to have collected 20 per cent of the small arms on the state's territory. However, if the zone proves to be highly volatile in its national holdings volumes due to many imports and exports, and demonstrates average deviations of its holdings of, say, 50 per cent (or in other words, in the course of a year, 50 per cent of those weapons enter and exit the state's territory), then it is possible that the 20 weapons collected represent as little as 13 per cent (20 per cent of 150 weapons) or as much as 40 per cent (20 per cent of 50 weapons) of the weapons that were actually there at the time of the collection programme.

Using one year as a reasonable estimate-generating period for producing holdings averages and deviation estimates, given sufficient information one can use the following two formulas for making assessments about the average holdings in a state.[29]

Average holdings:

$$\overline{x} = \sum_{i-1}^{n} \frac{x_i}{n}$$

where
x_i = number of weapons held at time i

Average deviations of average holdings:

$$\partial = \sqrt{\sum \frac{(x_i - \overline{x})^2}{(i-1)}}$$

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These averages, if they can be determined with some degree of certainty, are extremely important when trying to understand the potential impact of weapons collection programmes on a community or region. One study explains that:

> [t]here have been several problems with the [Cambodian weapons collection] programmes. First, only a fraction of the collected weapons has been destroyed, leading to the diversion and recirculation of many of the others. At the same time, supplies of new weapons have not been closed off. Military-style weapons can still be purchased in the Phnom Penh black market and through informal networks (Faltas *et al.*, 2001, p. 21).

This is a good example of the problem of conducting weapons collection programmes in countries where holdings averages fluctuate due to the regular import of small arms through authorized or unauthorized channels. Without stemming the flow of weapons, collection programmes may actually be fuelling imports because the government or collecting body becomes a 'consumer', thereby increasing demand and attracting supply. The average deviation rate gives one good indicator (best used with the turnover rate; see below) to measure the potential difficulties in implementing a programme and measuring its success (in terms of weapons collected).

A third type of measure is the *holdings turnover rate*. In this case, it is useful to know whether the 100 small arms in the zone of interest are the same 100 that were previously counted, or whether a

percentage of them are different. This number helps to illustrate the rate at which weapons move through a zone of interest, rather than how many might be there, and indicates whether the zone is a conduit for small arms.

For example, the average holdings for a state in a three-year period is 100, and its average deviation of holdings is only one per cent. However, in looking at the turnover rate (or unit replacement), one may learn that almost all weapons are new since the last count, perhaps indicating that this state is a pipeline for small arms traffic during the period examined. Combining this analysis with qualitative studies that explore whether the given state has made significant policy changes since the average deviation and turnover estimates were generated, and examining domestic inputs to the national holdings in the form of production volume figures, one is able to determine whether the state is a statistically high-risk state for reselling small arms or violating end-user certificate agreements. Just as Standard & Poor's has an international index for assessing credit risk, the holdings turnover rate can be used to assess the movement of weapons through a state, thereby enabling risk factors to be applied to end-user violations (see Goldring, 1997; Krause, 2002).

Holdings turnover rate:

$$T = \sum \frac{I_i + O_i}{2 * \bar{x}}$$

where:

I_i = inflow of weapons in time *i*
O_i = outflow of weapons in time *i*

A fourth measure is *stockpile lethality*. This rating is based on the quality and type of weapons in the national holdings. A high concentration of modern assault rifles like AK-74s would produce a much higher lethality rating than Enfields. At present a specific formula for creating such a lethality rating is not being offered in this study. Key variables, however, may include: cyclic rates of fire, magazine or clip capacity, ammunition type, weapon configuration, and condition (functional, damaged, etc.).

Stockpile lethality is an important consideration for weapons collection programmes. Using a statistically significant sample group, a number of the weapons collected can be rated on a lethality scale (for example, assault rifles versus small calibre pistols) as well as labelled 'functional' or 'not functional' to get a measure of the weapons being collected. Taking that sample and comparing it to the known national holdings lethality level, it would be possible to determine whether the weapons being collected are of the same lethality level as the general holdings of the country. If not, policy-makers can change the rules of the programme to target certain types of weapons or those with certain characteristics (Small Arms Survey, 2002, pp. 314–15).

Box 3 The power and limits of pricing data

Estimates of small arms numbers in a zone of interest are generally not known, but the price of weapons often is. There is a growing tendency among researchers to use pricing data as a proxy measure for actual volumes of weapons on the logic that cheaper prices mean more weapons in circulation, and higher prices means lower supply levels assuming the same demand levels. There is an intuitive attractiveness to this logic, and in some cases it appears to prove correct. Dramatic drops in prices for weapons and ammunition have been seen in numerous countries (such as Sudan in the early 1990s) and prices have also significantly increased after governmental controls started to be enforced (such as in Egypt under Mubarak).[30] This technique appears to hold promise as a useful proxy measure for determining the change in availability of weapons and ammunition. The trouble, however, is over-reliance on what pricing data can actually explain (see Table 2).

Conversations with Yemeni shopkeepers and gun owners demonstrated that AK-series weapons that fire 7.62mm ammunition cost roughly 30,000 riyals each (about USD 180 as of September 2001).[31] This represents the 'retail' or over-the-counter price, and not the bulk or wholesale price offered by importers or suppliers at major markets, where the price is likely lower.

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Table 2 Pricing of arms in Yemen

Yemeni arms prices	Riyals	US dollars
Vintage Russian AK-47	55,000	325.44
AK with folding stock	30,000	177.51
Chinese AK	18,000	106.51
Makarov	30,000	177.51
Tokarov	18,000	106.51
Beretta	80,000	473.37
AK ammunition (good quality)	30	0.18
AK ammunition (poor quality)	20	0.12
Hand grenades	500	2.96

There is a tendency to make assumptions regarding supply and demand based on the relative cost of weapons both within a community, and between communities. In Cambodia, for example, AK-series weapons cost approximately USD 40—several times less than in Yemen. However, it is uncertain whether knowledge of price alone—even with time series data compiled over several years and across diverse political circumstances—can serve as a proxy measure for small arms availability in different and unrelated communities, such as Yemen and Cambodia. While there is reason to think it may be helpful to document changes in availability *within* a rather closed community, even here there is need for caution.

'Prices are no panacea for overcoming the lack of information about quantities' (Small Arms Survey, 2002, p. 65). Political circumstances, resumption of hostilities, and differences in behaviour

in legal and illicit markets can all affect prices. However, even with these caveats, otherwise helpful comparative information on local pricing can still be pressed for more information than it can rightly yield. The problem is that the two formulas of supply/demand informing price, and price informing supply/demand are not commutative. In other words, they cannot be reversed and be equally correct, just as ten divided by five does not produce the same answer as five divided by ten.

The reason the two ideas are not commutative is that supply and demand are not causally linked. Demand is not caused by supply; demand is caused by use. Because small arms use can and does fluctuate based on social factors (as will be further described in Section VI), changes in price may not reflect supply and demand relationships at all, or else do so only very obliquely. It may be, for example, that hostility between two communities increases, leading to a rise in demand due to the rapid acquisition of available small arms driving up the price for both parties. Here, the same weapons are in the national holdings, but changes in social conditions created a demand, which in turn restricted supply and drove up prices. That does not mean that fewer small arms are now in the region, but rather that fewer are available for purchase or consumption.

There are also structural concerns that are not related to social factors, but rather to economic or financial matters. In Yemen, the riyal has demonstrated a roughly ten per cent inflation rate over the past several years. And yet the retail price of a non-vintage AK-series weapon has remained stable.[32] Because Yemen does not produce weapons and therefore imports them, the assault rifles must be purchased with riyals—or with another currency bought with riyals. This should therefore increase the cost of the weapons when purchased from another country unless both countries have the same devaluation rate for their currencies.

Furthermore, price indexes need to be generated in terms of purchasing power parity, not in terms of raw price figures. An assault rifle may cost about USD 180 in Yemen, USD 250 in Pakistan, and about USD 300 in the United States, but the GDP per capita in Yemen is USD 820 a year, USD 2,000 in Pakistan, and USD 36,200 in the United States.[33] This means that the average Yemeni is paying almost 22 per cent of an annual income, a Pakistani is paying 12.5 per cent, and a US citizen is paying 0.8 per cent. The weapon 'costs' a great deal more to the Yemeni than the American, even though the comparative raw price is fully 40 per cent less.

There is presently insufficient effort at formal modelling of demand relationships to allow even complete time series data on similar weapons in a given community or country to be used to draw conclusions about transfers or supply and demand more generally, based on pricing data above.

Creating a holdings estimate

This section provides a new approach to generating national holdings estimates in countries and/or regions that are characterized by two features. The first is the absence of a reasonable means of creating an empirical measure of the weapons in the zone of interest. This may be due to the zone being too large and impossible to search and/or because no records by authorized and recognized sources (such as export reports, military records of sale or transfer, etc.) are available or trusted. Both are true of Yemen.

The second characteristic is when there is evidence of a public weapons culture. A public weapons culture (as opposed to a private weapons culture) may be determined by an evident willingness (either through disinterest in the weapons being seen, or else a distinct interest in being seen) of gun-owning members of a community to discuss, reveal, and/or carry their weapons in 'public spaces'. A public space is one where weapons may be observed by individuals not of one's intimate community—such as people not of the same family, tribe, or clan. This term must be locally defined. In some communities weapons are regularly carried, discussed, displayed, and used (i.e. fired publicly, though not necessarily for hostile reasons). Yemen is such a place.

It is quite likely that someone from a private weapons culture visiting a place with a public weapons culture may mistakenly believe that there are far more guns in the place visited than there are in the visitor's home community. For those unfamiliar with small arms, the sight of them everywhere tends to leave a lasting impression. Though a fallacy, it is quite possible that the visitor will be inclined to conclude that there are so many weapons that they have, in essence, spilled out of people's homes.

Therefore, an interesting opportunity exists for researchers interested in communities that lack empirical data, but do have public weapons cultures—the chance to learn about communal holdings of weapons from the people who live there.

Unlike the hypothetical visitor, the local community member will not be overwhelmed by the display of small arms. In Yemen, locals may exaggerate the number of weapons, viewing them as a source of pride and an asset in inter-tribal rivalry. Nevertheless, if the objective is to create a communal holdings estimate within a reasonable order of magnitude, relying on the community's knowledge of their own social customs provides a helpful approach to generating estimates.

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A new national holdings estimate for Yemen

In order to calculate a national holdings estimate, it is necessary to calculate four different types of holdings: those of individual owners, those that are collectively owned, those stockpiled in markets, and state stockpiles.

Individual holdings

The process of creating a national holdings estimate for Yemen began by taking the 1994 census data and the 2001 population data as a first step towards producing regional estimates of possible holders of firearms. The 1994 census data provides estimated populations for each of the 19 governates of Yemen (plus the town of Sana'a which is a separate governorate), while information from the CIA *World Factbook* provides data on total population, age distribution patterns, the sex ratio, and the total estimated population growth rate (see Table 3). The estimated population in 1994 was 14.5 million people. The difference between the 1994 population estimate and the 2001 population estimate of approximately 18 million was calculated as a percentage change of approximately 20 per cent in those six years.[34] This is close to the CIA *World Factbook* estimate of 3.38 per cent increase per year since 1994.[35] It was assumed that each of the 19 governorates experienced a similar level of population growth over this six-year period. This is unlikely, but a necessary assumption due to the absence of more detailed information. The 1994 population figures were recalculated and these new figures provide a current estimate of population by governate (see Table 3).

Table 3. Population data for Yemen, July 2001	
Total population (estimate)	**18,078,035**
Age distribution	
0–14 years	47.21%
15–64 years	49.79%
65 years and over	3.00%
Sex ratio (males to females)	1.05:1
Population growth rate	3.38%

Source: US, CIA (2001)

As the overall national holdings estimate is likely to have a significant margin of error, the 1.05:1 sex ratio was rounded to a 1:1 ratio, and the population over 15 years of age was rounded from 49.79 per cent to 50 per cent for the sake of simplicity.

These population figures need to be refined to account for Yemeni social customs regarding the possible ownership or possession of small arms.[36] Who is allowed to possess a weapon? This question is based on the assumption—explained more thoroughly in Section IV—that national laws alone do not account for the social rules that govern small arm ownership and use. Instead, sub-state institutions, norms, customs, and laws (as well as social pressures) can influence conduct and practice.

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To inform this line of research, a series of group discussions and individual interviews were held with Yemeni tribesmen (mostly but not exclusively from Sana'a governate), and state and international organization officials with extensive experience in Yemen.

In group discussions, it was widely agreed that only men had the right to carry and own weapons. The age identified at which boys could possess their own weapon (as opposed to carrying their father's gun) varied from as young as ten to upwards of 16, demonstrating that the right to carry or own a gun varied from region to region, and also that it was not codified (meaning that there was no written and therefore referable law that specified when boys could carry or own weapons). However, a conservative estimate of 15 years old was widely considered a reasonable national average.[37] This does not mean that all boys, at 15 years old, will necessarily buy or be given their own gun. It means that it could happen, and will likely happen at some point after that, depending on the known rates of weapons acquisition in each region. In terms of estimates, however, each male over the age of 15 can be counted as potentially owning a gun.

Considering that males are 50 per cent of the population, and males over 15 also comprise 50 per cent of the population over 15, the total estimated number of Yemenis able to own or possess a weapon was 4.5 million in 2001. The regional breakdown of these figures by governorate is found in Table 4.

Two meetings were arranged with Yemenis and western medical and economic specialists with extensive experience in Yemen. The first group contained three people, and the second group had five people. Interviews were subsequently conducted with over a dozen people (Yemenis and western scholars) to confirm the results of the discussions. Each group was asked to produce an ordinal ranking of governorates based on the criteria of: 'Which governorate has most guns per man?'

An ordinal scale allows one to say 'this is bigger or smaller than that'. This is not to be mistaken with an interval scale, which quantifies the amount of difference between two things (such as '30 per cent bigger'). This is a concept familiar to most people, independent of education, background, or literacy. Simply asking questions and carefully listening to members of a community can generate an ordinal scale.

These discussions produced an ordered list based on first-hand knowledge of the various regions by local experts and residents. A remarkably similar ranking was generated by both groups, which produces confidence in the process. Had the rankings by the groups proved to be very different, it would have been necessary to repeat the exercise several more times to find whether one of the groups was generally less informed than the other, or whether the broader community simply did not have sufficient knowledge about this aspect of their environment to make this method useful in this locality. Generally speaking, it is helpful to conduct at least three focus groups, or else two focus groups and a series of interviews to rule out the possibility of chance similarities in ordinal rankings—in this case, chance similarity was highly unlikely given the number of governorates. The fewer the items being presented for ranking, the higher the chance of 'false positives' or coincidence affecting the results.

Table 4. Regional holding estimates among tribesmen in Yemen, 2001

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Ordinal ranking	Governorate	Estimated population (2001)	Males 15 and over	as % of able population	Guns per man (regional multiplier)	Weighted average	Total weapons
1	Ma'rib	219,664	54,916	1%	3.00	0.04	164,748
2	Al Jowf	203,328	50,832	1%	3.00	0.03	152,496
3	Sadah	580,876	145,219	3%	2.00	0.07	290,438
4	Sana'a	1,121,304	280,326	6%	2.00	0.13	560,652
5	Al Dhalee	600,000	150,000	3%	2.00	0.07	300,000
6	Amran	499,525	124,881	3%	2.00	0.06	249,763
7	Damar	1,258,944	314,736	7%	1.60	0.11	503,578
8	Ebb	2,356,770	589,193	13%	1.50	0.20	883,790
9	Abyan	499,525	124,881	3%	1.50	0.04	187,322
10	Hadja	1,519,014	379,754	9%	1.50	0.13	569,631
11	Shabwa	450,649	112,662	3%	1.40	0.04	157,727
12	Taiz	2,638,645	659,661	15%	1.20	0.18	791,594
13	Lahj	759,209	189,802	4%	1.00	0.04	189,802
14	Mahweet	483,590	120,898	3%	0.50	0.01	60,449
15	Hodahda	2,105,392	526,348	12%	0.50	0.06	263,174
16	Hadramout	1,045,442	261,361	6%	0.50	0.03	130,681
17	Aden	677,202	169,301	4%	0.50	0.02	84,651
18	Al Baydah	606,901	151,725	3%	0.20	0.01	30,345
19	Maharah	135,138	33,785	1%	0.20	0.00	6,757
		17,761,118	**4,440,281**	**100%**		**National weighted multiplier 1.26**	**National tribesmen total 5,577,597**

Each group was also asked: 'How many guns does a man own, on average, in each governorate?' A long discussion ensued, concerning what the words 'gun' and 'man' meant. Other questions followed. Is a man too old to fight considered a man? Answers to this query illustrated that being a man was not only a biological truth but also a social truth and a status that, presumably, could be lost.[38] Was a pistol a gun? What about a shotgun or hunting rifle? Most Yemenis, at first, did not consider pistols (e.g. 9mm semi-automatic Makarovs) to be guns—unlike the author, who would never have thought to question the idea. In fact, only fully automatic weapons were considered 'real guns'. Once it became clear that the author's interest was in 'all weapons capable of firing a bullet and injuring a human being', the discussion changed dramatically, as did the estimates and the figures provided.

Based on these discussions, regional multipliers were generated ranging from a low of 0.2 guns per man in Maharah, to three guns per man in Ma'rib and Al Jowf. The higher of the group estimates per governorate was used. This information yielded a regional estimate of small arms controlled by local tribesmen from the age of 15 and up. On the basis of this approach, the total number of weapons estimated to be in the hands of individual tribesmen in Yemen is 5.6 million weapons (see Table 4).

Collective tribal holdings

Tribes collectively possess stockpiles of weapons ranging from pistols to artillery. The weapons in the possession of a tribe are synonymous with the weapons owned by the sheikh of a tribe.

According to interviewees, there are effectively three types of sheikhs: major, minor, and what might be called questionable, as the third group are not always recognized as sheiks. Interviewees estimated that there are 100 major sheikhs with average stockpiles of 1,000 pieces each, 1,000 minor sheikhs with perhaps 40 pieces each, and about 5,500 questionable sheikhs with perhaps eight pieces each. This produced a collective tribal holding figure of 184,000 weapons.

Market holdings

Weapons are widely available and regularly sold throughout the country.[39] There are five major regional markets: in Jehannah (in Sana'a governorate), Sadah, Al Baydah, Al Jowf, and Abyan. With the exception of the last, these are all located in the northern part of the country. Smaller shops generally buy their weapons 'wholesale' and resell them at retail prices. There were estimated to be about 300 shops in Yemen, with an average of 100 weapons each. These figures were generally accepted by both groups, producing an estimate of 30,000 weapons.

State holdings

Estimates here are particularly difficult to make, as the Government of Yemen, at present, is not forthcoming with such data. A rough estimate was made, however, based on the following information. There are approximately 100,000 people in the Yemeni armed forces.[40] In 1994, during the civil war, however, it was rumoured that the North Yemeni government under President Saleh did not have enough weapons to supply the armed forces and instead asked local tribesmen to bring their own weapons to battle. Although the force size was very likely higher then, it implies that large surplus stocks were unavailable.

Given the information on small arms imports provided in Table 1, the government stockpile has grown since 1994. Some southern army weaponry was captured. Also, a shopkeeper from outside Dhamar explained that major importers licensed by the government pay to the Ministry of Defence one-third of the weapons imported, over and above regular taxes.[41] This weaponry is then stockpiled, and in some cases it is used as gifts to tribal sheikhs in return for support, and in other cases is actually used to barter with merchants in return for larger weapon systems that the government would prefer not be in wider circulation. This implies that the government's depots are presently quite large, but have a very high turnover rate (i.e. weapons move in and out of the stockpiles often), and may also have a high average deviation. Therefore, stockpile estimates for the state are likely to have a very high margin of error, unlike the tribesmen totals for which a higher degree of stability can be assumed.

Using western country multipliers of soldier to weapon ratios—as for Canada or the United States, for instance—is untenable. There is no reason to presume that the soldier-to-weapon ratio in Yemen is in any way similar to that of the few western armies for which information is available.

A very low estimate of government stockpiles was made where it was assumed that one weapon per soldier exists, as well as one-third the market stockpiles and one-third the tribal stockpiles since 1994. This latter figure may be inaccurate, however, as the tribal stockpiles came largely from looted southern army depots rather than imports. This figure does not include weapons smuggled into Yemen.

An official from the Ministry of Foreign Affairs estimated 'a few million' small arms for the state, which may be an extremely high estimate considering the size of the Yemeni army.[42] However, for the sake of producing an estimate that will capture all small arms in Yemen, 1.5 million weapons are estimated to be in the hands of the state, although this might be a rather liberal estimate.

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Yemen's national holdings

Taking into account the holdings of individuals, tribes, the market, and the state, Yemen's 2001 national holdings estimate for small arms is calculated to be about 7.3 million weapons or, due to the high margin of error, between 6–9 million (see Table 5). This figure represents only 10–20 per cent of the mythical estimate of over 50 million small arms.

Table 5. Yemen's national holdings of small arms, 2001

Tribes	5,577,597
Sheikhs	184,000
Markets	30,000
State	1,500,000
Total	7,291,597

By weighing the population figures for each governorate against its regional multiplier, a weighted average of weapons per man (i.e. over age 15) comes to 1.26. The estimate of 7.3 million weapons for a population of 17.7 million leads to roughly 0.4 small arms per capita in Yemen, or 40 guns per 100 people. To put this into perspective, the *Small Arms Survey 2001* estimated that Argentina has about 14 guns per 100 people, New Zealand and Canada have 25 per 100, while the United States has 84 per 100 (Small Arms Survey, 2001, ch. 2). If the estimates for Yemen are correct, it would place Yemen *near* the top of this short list, but not *at* the top, a place still held by the United States given known

figures. Consequently, Yemen retains it rank as among the most heavily armed societies in the world, especially when considering the lethality ratings.[43]

Because of the cultural reasons for small arms demand in Yemen (to be introduced in Section IV), demand levels among civilians is tied to population growth. Based on the projection that the ratio of men to weapons (1:1.26) will not change in the absence of state policies to alter the demand for weapons (or else control or restrict the supply); Yemen appears to have a consumption rate of roughly 200,000 new small arms every year (see Table 6).

Table 6. Projected estimate of tribesmen holdings and demand

	2001	2002	2003	2004	2005	2006
Projected tribesmen totals of small arms and light weapons	5,580,000	5,770,000	5,960,000	6,160,000	6,370,000	6,590,000
Projected demand per year	–	190,000	190,000	200,000	210,000	220,000

Now that demand estimates are available, many other figures need to be determined to refine these estimates in order to provide some insight into Yemen's role in the region as both a consumer and supplier of small arms.

Filling the modeling gaps

Below is a list of the types of questions about local customs that identify pieces of community information that could inform a more statistically rigorous understanding of small arms holdings. These types of questions—of which there are many more—might be helpful to those with a further interest in Yemen's small arms profile, and are also useful for those who wish to use the approach outlined here to create profiles of other communities.

- *What happens to the weapons of the dead?* Are they re-circulated back into society? By tracing inheritance among Yemeni men, it might be possible to refine the figures for annual demand, because among those weapons imported, some will surely be either passed on to members of the family or sold. This means that the gradually rising projected demand figure noted in Table 6 will be affected by the life expectancy of men in Yemeni society.
- *Do small arms have sentimental value, or else are relationships formed between men and weapons that affect whether they will be traded, sold, or otherwise passed on?* If weapons are kept because of who they belonged to, their historical significance, or other such emotive reasons, then it will likely prove difficult to extract them from their owners for collection and destruction programmes or buy-back programmes. Knowing the social or emotional significance of weapons will help determine the likelihood they will be passed on to another party.
- *Are there community rules concerning to whom a member may sell a weapon?* This information would inform both distribution patterns of weapons, and provide clues about the transfer dynamics of weapons between and through communities.
- *What is the relationship between ammunition availability and weapon preference?* In some cases, ammunition is extremely difficult to obtain and therefore priced accordingly. This could make them highly desirable as they communicate wealth and prestige, but they may also be very undesirable as they are not very useful. At present, it is unknown which, if either, holds true.

IV. The root causes of peace: Social controls

Violence in Yemeni society

A small arms impact assessment has never been produced for Yemen. Consequently, the health, crime, economic, and psychological consequences of small arms use remain uncertain. For a thorough study to be conducted on even one of these elements, a great deal of consideration would have to be given by people in numerous fields to define the parameters of the study and the means of carrying it out. If one were interested in crime, for example, the researcher would have to make a distinction between using a normative definition of crime (what should be considered criminal) and an instrumental definition (what is against the law). The first has the benefit of providing a universal approach and—depending on one's perspective—being morally satisfying, but it lacks cultural understanding and an appreciation of the problems with legal (and moral) pluralism. To study criminality in Yemen would require detailed knowledge of Yemeni criminal law. It would also involve an understanding of legal procedures, local definitions of terms (e.g. what does 'solved' mean?), reporting practices, an appreciation for changes in laws between years that impinge on the definitions (and hence reporting) of the crime categories, and an examination of public relations with the security sector so that changes in social practices on reporting crimes (rather than, say, taking matters into one's own hands) can be better understood.

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Table 7. Selected national crime statistics as reported to Interpol, 1996–1999

	1996		**1997**		**1998**		**1999**	
Crime	Cases	Solved	Cases	Solved	Cases	Solved	Cases	Solved
Murder	525 (924)	525	787	–	–	–	942 (12%)	82.59%
Sex offences	62 (54)	110	31*		–	–	238 (18%)	94.95%
Serious assault	–	–	–	–	–	–	567	70.01%
Theft (all kinds)	4,438	2,926	2,593	–	–	–	3,147 (1.24%)	48.23%
Drug offences	727	706	247	–	–	–	24	91.66%
Total number of offences contained in national crime statistics ***	**9,525 (108)**	**6,267**	**5,101**	**62%****	**–**	**–**	**11,316**	**–**

Source: Interpol (reports from 1996 to 1999).

Note: Numbers in parentheses are for 'attempts'. In 1997 no data was submitted under the category 'sex offences', so numbers are for 'rape'. In 1999 Yemen changed its reporting of solved from raw numbers to percentages.

** Includes sex offences, including rape.*
*** In 1997, Yemen reported this information as a percentage, not a raw figure.*
**** Total include other crime statistics, not cited here.*

This does not mean that data is completely unavailable, or that a general sense of crime levels in Yemen cannot be discussed. For example, specific numbers of criminal incidents have been reported to Interpol. Yemen submitted data for 1996, 1997, and 1999 (see Table 7). Interpol has not yet released data for 2000 and 2001. Unfortunately, however, definitions of what constitute criminal acts are not readily available, thereby making comparisons between countries impossible.[44]

Perhaps the best means of demonstrating the difficulty of undertaking impact assessments from presently available statistics is to do what Interpol cautions against, namely compare the data with another regional state (see Table 8). If Yemeni data from 1999 (population about 18.5 million) is compared with data from the United Arab Emirates (population 2.4 million) it becomes clear that one of the following three options must explain why Yemen seems to have lower crime rates than the United Arab Emirates:

- Yemen has a far more lenient definition of these crimes;
- incidents are significantly under-reported (either within Yemen or to Interpol); or
- the numbers are indeed accurate and something is keeping crime in Yemen extremely low.

Table 8. Comparing selected national crime statistics for Yemen and the United Arab Emirates

	Yemen 1999		**UAE 1998***	
Crime	Cases	Solved	Cases	Solved
Murder	942	82.59%	73	91.78%
Sex offences	238	94.95%	1,468	90%
Serious assault	567	70.01%	247	93.52%
Theft (all kinds)	3,147	48.23%	8,263	20.39%
Drug offences	24	91.66%	559	100.00%
Total* number of offences contained in national crime statistics	**11,316**	**–**	**63,633**	**85.47%**

Note: The UAE did not report in 1999.
** Total includes other crime statistics, not cited here.*

Source: Interpol (1998, 1999)

Without further investigation of the criminal justice system in Yemen, it is not possible to make firm conclusions about which of these explanations is most likely; or which combination. However, due to the often poor relationship between the rural population and the state security sector, it is likely that crime is highly under-reported in Yemen, among other possible factors.

In contrast to the questionable information provided to Interpol, it is quite likely that the Ministry of the Interior, the Office of the Attorney General and/or the Central Statistical Organization have far more detailed records of tribal clashes, casualties, and other figures that would present a more useful and detailed picture of the security situation within Yemen. For example, in 1998 Major-General Husayn Muhammad Arab, the Interior Minister from 1994 to 2001, stated 'We recorded 8,446 crimes last year. This shows that crime is still at a reasonable level.'[45] Whether or not this assessment of the situation is shared, it implies that the Interior Ministry is actively involved in data collection of criminal incidents, though the classifications used are unclear.[46] That the figure provided by the Minister is also

at odds with the Interpol data (8,446 versus 5,101) only underscores the importance of not using this data for more than indications of changes in reporting practices by the population to the Yemeni authorities, or else the Yemeni authorities to Interpol.[47]

Information gleaned from local focus groups, news sources, and interviews with both Yemenis and western professionals working in Yemen suggest that Yemen is not a country with high crime rates, despite its international reputation for kidnapping and—as discussed often since 11 September 2001—for being a training ground for terrorist cells operating against western targets. Indeed, Yemen may still be a dangerous country if not necessarily criminalized, as stockpile explosions, tribal violence, revenge killings, and attacks on state organs happen with some regularity as reported in local, regional, and international newspapers. It cannot be over-emphasized, however, that violence in Yemen, though common, is highly controlled, deliberate, targeted, and restricted. In this sense, the 'small arms problem' bears very little if any resemblance to that found in cities like Rio de Janeiro, or to civil wars in Africa.

This observation by people knowledgeable about Yemeni life should be taken as more than simply a consensual impression. The estimates come not only from hearsay but also from a thorough understanding of the strong social controls on individual Yemeni behaviour that result from tribal affiliations, first and foremost, and then the moderating influences of Islam as a religion of law that also regulates communal behaviour. Yemeni life is tribal, tribal life is known to be robust and stable, and individual actions are governed by intra-tribal rules and inter-tribal relations. Yemenis and Yemeni specialists can make very well-informed estimates of crime levels in the country even if reliable, official data is unavailable.

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As one UN official working in Sana'a explained, the 'greatest criminal problems [for expatriates living in Yemen] are kidnappings, vehicular hijackings, the theft of vehicles, as well as burglaries and petty theft.' This was confirmed by a conversation with a senior official at the oil company Halliburton, who has lived and worked in the Middle East since the 1970s and has been in Yemen for five years.[48] As he explained, the company has suffered a number of kidnappings, but in all cases those kidnapped were released unharmed. Additionally, they have had innumerable cars stolen, all of which, it is important to note, displayed the white licence plates that are only issued to foreigners. That foreigners experience such high rates of car theft is partly because their vehicles are easy to identify and, unlike tribal members, they have no recourse to communal defence, making them an easy target and unlikely source of retribution.

In addition to local interviews and observation, open source reporting of violent acts and crime can also provide an excellent indication of the kinds of crime committed.[49] A sample of articles from the Arab news aggregator, Al-Bab, assembling 138 cases between 1998 and 1999, here categorized eight types of violent crime:

- public demonstrations, such as political protests, that turn violent;
- tribal clashes, such as disputes over resources;
- tribe-state clashes (including security sector incidents), for example, a confrontation at security checkpoints;
- tribe-company/private sector incidents, such as sabotage to a oil pipeline;
- single weapon accidents, including accidental detonation or discharge;
- stockpile accidents, such as an explosion at a weapons depot;
- radical Islamic attacks or provocations; and
- kidnapping.

Note that no incident in the papers was reported as 'criminal' in the sense of one individual attacking another individual, for personal reasons unrelated to larger communal concerns.

Box 4 Kidnapping in Yemen

Between 1996 and September 2001, 158 people were kidnapped in 47 separate incidents (see Table 9). Both rural and urban Yemenis tend not to view kidnapping as a form of violence or a violation of civil liberties. Kidnapping is a familiar feature of Yemeni history, as the state used to take the sons of leaders hostage to ensure loyalty. However, inter-tribal kidnappings or those of relatives of state officials or involving business partners with a grudge is a very recent development.

In western society, such actions are usually treated as a human rights violation. This is similar (though not identical) to the attitude of people in Asia, where some of the hostages originated.[50] Yemenis have come to appreciate that such actions are highly objectionable to non-Yemenis. Because they see the practice through their own historical experience and are not steeped in the comparable philosophical perspective of those abducted, the state has responded to the practice of tribal kidnapping by abducting tribal members in retaliation (*The Economist*, 2002a, pp. 39–40). The release of foreigners tends to be negotiated. Indeed, so rooted is the idea of kidnapping being 'harmless' that one Yemeni goes so far as to suggest that:

> [I]f you're one of the 40 tourists who may be kidnapped in Yemen next year (that's if the government doesn't find a solution by then) then don't worry, enjoy your time as a hostage, your hosts (kidnappers) will treat you not as a kidnapped person, but as a guest. If you're lucky you'll get kidnapped by a rich tribe and you'll be fed lamb and exotic fruits and return home carrying a nicely ornamented Yemeni dagger, and maybe some silver jewellery for that significant other (Al-Ashwal, 1997).

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Though widely reported in western news sources, kidnapping in Yemen is less frequent than generally assumed. It must be appreciated that kidnapping in Yemen is a qualitatively different endeavour than kidnapping in places such as the Philippines (where it is often accompanied by murder). Yemeni kidnappings are generally intended to extract concessions from the government, especially in terms of resources for the tribal region. Foreigners are the perfect targets because they have no tribal affiliation, and therefore taking them hostage brings no risk except from the government, which, until now, has generally negotiated their release or acted in kind to secure their release.

Small arms are routinely used in these kidnappings. As tribesmen regularly carry weapons, it is unclear whether these weapons are used to directly threaten the hostages, or whether their presence in the situation is perceived by the hostages as an implicit threat of death or injury should they resist.

Table 9 Reported kidnapping incidents in Yemen, 1996–2001*

	Kidnap incidents			Foreigners kidnapped		
Year	Total number of incidents	Involving tourists	Involving expatriates	Total kidnapped	Tourists	Expatriates
1996	4	2	2	23	21	2
1997	10	6	4	50	43	7
1998	11	6	5	42	33	9
1999	10	4	6	27	11	16
2000	6	2	4	8	4	4
2001	7	1	6	8	2	6
Total *	47 (48)	21	26 (27)	157 (158)	114	43 (44)

** Totals, as provided in the source, do not add up correctly. Presumed correct totals appear in brackets.*
Source: <http://www.al-bab.com/yemen/data/kidnap.htm>

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Understanding the importance of social controls

People make choices concerning violence on the basis of how they understand their world, and what constitutes acceptable action within it. If one is interested in why violence is committed or not committed with small arms, it is necessary to learn how the people in question understand their world, and what they consider acceptable behaviour in it. Likewise, by being conscious of the sources of acceptability and unacceptability it is possible to uncover—in great detail and with certain implications—why weapons are used as they are in a particular community or society.

This approach to understanding social violence by looking at how people live their lives is quite different from one that looks only at the environment in which they live. All people live at some level of wealth, health, and security. Some researchers, however, find these environmental conditions to be more important than people's interactions with those environments, or their interactions with each other based on their understandings of their world and how they communicate about that world. From this perspective emerge arguments about politics of exclusion, ethnic conflict, poverty, crime, the need for personal security, protection against state abuses of power, unemployment, lack of opportunities for youth, bad governance, or the absence of law as 'causes' of small arms violence. The question remains, however, how do these societal conditions lead to small arms violence? If they were indeed casual, should one not expect to find the same social behaviour in places with identical environmental conditions?

The question can be examined from another angle, turning away from structural causes of violence towards informative studies of history, ethnography, anthropology, and sociology. By taking ideas seriously, matters of ethics, values, communicative practices, and states of mind become more valued as sources of explanation for individual and communal behaviour than the physical world alone. Few from this school of thought would suggest that poverty or lack of food is unimportant to the safety of

a community or has no relation to criminality; rather, they are more inclined to argue that the existence of poverty does not determine how people will respond to it. Instead, it is necessary to know a great deal about the lives and thoughts of the people who live with it.

It is worth contemplating the causes of peace, rather than the root causes of conflict.

> We shall never banish conflict. Indeed, it is wrongheaded and blind of us to think that we should. Rather, conflict must be controlled and must be utilized profitably in order to create more and better cultural means of living and working together—in short, conflict, whether it be marital or political, can, if it is adequately institutionalized, be used as the growing point of culture and of peace (Bohannan, 1967, p. xi).

From this perspective, rather than assuming that conflict is unusual, conflict is seen as natural and normal. This approach assumes that all life is characterized by some social conflict that must be dealt with on a regular, ongoing basis. What is interesting is how conflict is resolved—whether it is with or without violence, and which of the two is preferred by the community in question. More subversively, it also points out that even when there is economic underdevelopment, ethnic conflict, and inequality, sometimes this is manifested as hostility and other times it is not. Can one identify factors that restrain and control violence rather than cause it? Once local ideas about the use of violence as a conflict resolution tool are understood, one can ask, 'does the presence of small arms change that preference system?' If so, why? If not, why not?

If one believes that 'the accessibility of guns facilitates violence' (the accessibility thesis) (Small Arms Survey, 2001, p. 202), one would expect Yemen to have a tremendous amount of small arms violence. As estimated in Section III, Yemen has some 6–9 million, highly lethal small arms, a lack of development, few if any state laws, and severely limited arable land and water resources. Yet, contrary to the expectations of adherents to the accessibility thesis, it does not have a large amount of small arms violence.

However, it is much more than a matter of guns facilitating violence. The core of the debate is whether the availability of weapons *causes* violence, and whether the argument can be made that more guns always means more violence. With few exceptions, the more accessible the tools of violence, the more likely they are to be used.

And yet, counter-examples exist, and the data itself—even when demonstrating some sort of relationship between availability of weapons and violence—cannot suggest either a causal or universal explanation. If one is interested in the reasons why conflict does not take place in localities and times when it might be expected to, it is necessary to study not the reasons people go to war or engage in violent acts, but rather the social structures that either prevent violence from happening, or pose such stresses on the individual that it is considered an unwise and undesirable course of action.

Defining social controls

Very broadly, social controls refer to the restrictions or limitations on actions by members of an individual's community (one's family, clan, tribe, or even nation). At the most general level, social controls function by rewarding the individual for something done well or threatening the individual with some form of loss as a consequence of undertaking a certain action. This could take the form of loss of liberty of movement, as when a person is imprisoned. In other cases, it is loss of social standing, such as loss of reputation, honour, or dignity. These losses may be personal—in that they

relate only to the person who committed the offence—or they may be communal in that they bring shame or dishonour to one's community. Social controls can be formalized (such as through a community's legal structure), or else can be informal and function through the understood values of a community.

There are three types of social controls in communities: norms, customs, and laws. The definitions of each, and their relationships with each other, are highly complex and contested, and a discussion of different scholarly approaches to thinking about them is beyond the scope of this paper. However, in essence:

> Law must be distinguished from traditions and fashions and more specifically, it must be differentiated from norm and from custom. A norm is a rule, more or less overt, which expresses 'ought' aspects of relationships between human beings. Custom is a body of such norms—including regular deviations and compromises with norms—that is actually followed in practice much of the time (Bohannan, 1967).

Norms and customs, however, are different from law because:

> Whereas custom continues to inhere in, and only in, these institutions which it governs (and which in turn govern it), law is specifically recreated, by agents of society, in a narrower and recognizable context—that is, in the context of the institutions that are legal in character and, to some degree at least, discrete from all others (Bohannan, 1967).

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All societies have norms (or rules of behaviour) that are recognized as being things people ought to do, and taken together, they form the customs of a community. The legal realm of life observes customs and—with the authority of recognized people like judges, imams, sheikhs, or kings who can use (or order) force to uphold their decisions—defends or changes those customs and their practices.

In order to maintain some social cohesion and identity through time, all societies must have controls that are understood by—and enforced upon—people in that society. The most fruitful way of understanding social controls on small arms and light weapons in a society is not to focus on change and the future, but on continuity and the past. If there is new demand for small arms and if violence is increasing, one is better informed about why if one understands the social institutions that govern community life rather than believing that small arms 'change everything'.

A useful way to approach the subject of social controls on small arms and light weapons in a specific community is to use the following list of questions:

- Who can possess a weapon?
- Who can carry/display a weapon overtly/in public?
- Who can know that a person possesses or carries a weapon?
- Who can fire a weapon?
- Under what circumstances can a weapon be fired?
- What are the consequences if these rules are broken?

This list of questions is based on one of the few universal observations about small arms use: a weapon must be carried and fired by an individual to cause physical harm to another person. In firing the

weapon at another person, the person has committed a social act. All social acts are governed—whether explicitly or implicitly—by rules. There are consequences to following or breaking rules. In summary, social controls are the rules that members of the community know and are expected to follow, and which are enforceable by that community.

Questions concerning social controls are best not asked in survey form because many people are unfamiliar with, untrusting of, or disrespectful of the notion of being questioned in such a manner. Furthermore, they cannot be successfully answered if the categories, definitions, or concepts that are used to inform the questions are based on categories the researcher takes from his or her own culture. Indeed, the answers come only by listening, thus allowing the community to present its own categories of relevance and its own matrix of relevancy. In this way, the objects and ideas most important to the community, as well as the relations between those objects and ideas, begin to unfold before the researcher. How this is done, however, is a complex and intellectually rigorous process that is studied in the fields of ethnography, anthropology, and communication studies. Tribes remain the primary form of social control in Yemen. Traditions and customs related to carrying arms and settling disputes are most strongly related to tribes and tribal values. The following section is only a brief summary of some of the actual social controls on violence in Yemen.

Tribal social controls in Yemen[51]

Two of Yemen's finest contemporary poets, who wielded a great deal of political influence, feared:

> … that modernization has led to Westernization and hence an abandonment on the part of Yemeni youth of ancient tribal traditions. This transformation of values, they believe, have weakened, and will continue to weaken, the country politically. In their opinion tribalism has been the nation's backbone since time immemorial; to threaten tribal traditions is to imperil the country's political independence, for Yemen will be gradually absorbed into the Western socio-political system. In the context of Islamic resurgence, which has vehemently rejected Westernization, this exchange of views… is highly significant. For this reason it also has great importance for the formation of government policies. The state, in effect, cannot ignore this vocal opinion without, as in the case of pre-revolutionary Iran, endangering itself (Caton, 1990, p. 217).

This argument is very much alive in Yemen, and the time-honoured social structures of tribal life are not only considered part of Yemen's past, but for many are also the strength of Yemen's future. The claim by some urban Yemeni that tribalism is 'backwards' must contend with highly persuasive and forceful arguments that claim the opposite.[52] The question of the role of the tribe in Yemeni life lies at the heart of how social violence is to be regulated because it is through the rules of the tribe that one learns what is considered reasonable and unreasonable about small arms possession and use.

The government recognizes and makes use of the ambiguity about where the future of Yemen lies.

> Politically, the tribes … remain relatively autonomous. They are also quite well armed. In fact, to some extent the government depends on the armed tribes, especially in the east, to help defend its borders in case of external aggression, and it is always nervous about the possibility of tribal dissidence stirred up by its policies. In short, the tribes are a power to be reckoned with, and their actions and discourses are not taken lightly by the state (Caton, 1990, p. 218).

If the tribe is one of the major social institutions in Yemen, and if the tribe can be expected to remain a strong socializing force in Yemeni society, then it is vital that one understands how the tribe understands the role of small arms and how they regulate their use.

Social controls exist at all levels of social interaction. That means that each Yemeni tribesman personally knows what he should and should not do. The lines of right and wrong are very clear, and they are communicated to children at an early age. It also means that each tribe collectively knows the consequences of confronting another tribe over common matters such as water rights, land issues, and other natural resources, or social matters such as dishonour.

A single question forms the core of all inquiries into social controls about small arms use. Simply put, 'If X shoots Y, what happens to X?' In many circumstances, rules can be learned by observing the consequences of breaking them. This is what anthropologists and ethnographers do, which is why their work could prove so valuable to the study of small arms violence at the community level.[53]

Based on the work of these types of researchers, and also through interviews and correspondence with Yemeni and Arab scholars, it is clear that while each Yemeni tribe is different, certain general practices are common.

If, for example, a member of a tribe shoots another member of the same tribe the process is usually as follows. The first step will often be that families try to find a resolution if they are on speaking terms. Failing this, they turn to the tribe's sheikh for mediation. The sheikh's position as 'first among equals' requires his intervention to facilitate the peaceful resolution of conflict.

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After injury and the intervention of the mediator, some temporary monetary compensation is usually paid to the family of the victim and a dagger or some small arms are given as both payment and as a symbolic gesture of passing on the means of injury.[54]

The amount of money and/or the number and types of weapons depend on the importance of the person who was killed. Yemeni tribal culture is based upon complex hierarchies. Some of the rankings are provided directly from the Koran, which explains how people should be compensated for the lives of a Muslim man versus a non-Muslim man, for example, or else the life of a man versus that of a woman.

Once the initial actions are taken to the momentary satisfaction of the aggrieved party, a truce is agreed for a certain period of time, for example one year. The issue or blood is considered 'hanging up' (i.e. set aside) and needs to be solved permanently. The truce can be extended indefinitely if the sheikh can get away with it. Perhaps intervening factors in the life of the community might change the significance of what occurred. However, in cases where the issue will not go away, a final settlement must be reached. Monetary compensation ('blood money') is agreed on and weapons are usually demanded as well.

Those representing the victim might want the perpetrator to be killed. This is not a preferred method for the community as a whole, though it is not uncommon for the family in question to prefer it. In these cases, the sheikh may make a decision for the community and carry out or order the execution. If the events drag on, the victim's family may decide to kill the guilty party on their own.

Retribution killing ('blood revenge') is common, and is a socially recognized and tolerated practice, despite being technically illegal. It not only takes place at the intra-tribal level, but also at the inter-tribal

level. This too has rules. If a tribesman kills a member of another tribe and there is no historical grievance between the two parties involved, then the killer's tribe may publicly announce that the offender is no longer a member of the tribe by sending money to the other tribe along with an empty coffin that signifies that anyone who finds the perpetrator can kill him, or they hand him over to the wronged tribe to do whatever they want with him.[55]

Blood revenge has been explained in the following manner:

> Conventional and tribal norms confess or recognize blood revenge as a means of retaliation. It gives the person the right to fire his gun at his enemy using only three bullets. If he is not able to seize this chance, he doesn't have the right to shoot him again. The revenge seeker may not commit this crime in crowded markets, which are assigned as safe areas for people to trade. The punishment is blood money and if it is not accepted, the death punishment is inevitable. The Law of Crimes and Punishment No. 12 of 1994 considers blood revenge a crime deserving capital punishment or blood money, if the relatives of the killed person accept. The number of blood revenge incidents in Yemen reached 1,257 during 1996 (*Yemen Times*, 1998).[56]

Other social practices that control small arms violence at the tribal level include: using mediators to resolve disputes between communities; kidnapping foreigners in order to signal disapproval and the opening of dialogue for the settlement of grievances; paying 'blood money' or compensation to another tribe for wrongs committed; engaging in low-level armed skirmishes; inflicting communal punishment; using complex signalling techniques about intentions through poetry chanted in front of other tribes; and applying social pressures in the form of shame and honour within the community or family.

In Yemen, the wide availability of highly lethal small arms helps ensure that the tribal institutions remain strong *vis-à-vis* the government, and also that the traditional mechanisms of social control within the tribes and between the tribes remain strong as well. This raises an observation that much of the literature on small arms does not address: small arms are in many ways a stabilizing force in tribal and inter-tribal relations in Yemen, while simultaneously being a threat to the state's ambitions of gaining centralized control over unco-operative regions because of their capacity—and sometimes evident willingness—to resist. These same weapons, however, are also a potentially destabilizing force when the social institutions that regulate their use (in order of importance: tribal, Islamic, and 'secular' state law) begin to compete with each other, leading to conflicting interests within or between communities, and also conflicting understandings for individuals of what is socially acceptable and what is not.

The subject is broad and the scholarship about tribal practices in the region is rich. This brief review of social controls in Yemeni tribal society illustrates the following key points relevant to small arms research:

- The absence of state law does not mean that communities are without rules of their own;
- The rules that societies follow may or may not be threatened by the proliferation of small arms;
- Not all conflict resolution mechanisms are peaceful or non-violent, and violence is often the preferred means of resolving disputes in some communities;
- Social controls exist in all societies, and careful study of them will help explain the role that small arms play in that community; and
- Such an investigation—if conducted over a broad period of time—will also help create a better understanding of whether the proliferation of small arms has weakened, strengthened, or otherwise left unaffected those social institutions that formerly maintained the society's cohesion.

Understanding demand[57]

Individuals in different societies understand the role of weapons differently. As such, they use weapons differently. Because demand is not a function of supply but rather of use, it stands to reason that appreciation of demand factors requires a greater appreciation for the different uses of weapons in communities. While weapons do serve some very practical functions (they can be used to kill more efficiently and more easily than other instruments of lower technology), in some places their function is far more communicative than practical.[58] Of great significance in each case is what weapon ownership communicates to others about situated and central values in human life, such as self-reliance, masculinity (or femininity), justice, honour, pride, and a great many other properties of mind.

If weapons are seldom used to cause harm, they are often displayed, carried, discussed and stored for later or possible use. Their possession and threat of violent use signals things to other people in the community or in other communities. The primary reason for demand, therefore, is their communicative role of potential violent use in society.[59]

This communicative role is highly important for matters of deterrence. Deterrence means the communication of a credible threat to a potential adversary for actions that adversary might take. Although deterrence has been widely studied in the fields of strategy, nuclear warfare, and international relations, it has not been treated systematically in the literature on small arms. While such a treatment is beyond the scope of this study, it is possible to demonstrate why the subject is worthy of attention.

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If the primary role of weapons is communicative, then the principal message may convey, 'I have the capacity to exercise power over other people, possibly with violence'. If the consequences of that message are that other people refrain from taking actions that might otherwise have been taken, then they have been deterred. Knowing whether this has, in fact, taken place is a complicated endeavour and one difficult to prove without studies of community intentions and their own explanations for non-action. However, in cases where deterrence works, weapons become a stabilizing factor in inter-communal relations, even though the capacity to do extraordinary harm remains a reality.

It is not suggested that this is the primary reason for relative calm in Yemeni society. However, the consequences of exercising one's desire for violence are unquestionably held in check by social controls: the values of the community itself, and the community's knowledge that unregulated bloodshed can bring about harsh retribution and ultimately threaten group cohesion. 'People are scared of inflicting too many casualties because they have to pay blood money in the final totting up of the score.'[60] Tribes know that mass warfare will undermine tribal cohesion and power because the rites of blood money and revenge killings cannot be practised if the number of dead is too high.

Despite the high number of weapons in circulation in Yemen, the country is not a 'saturated' market for small arms, and as seen in Table 6 there appears to be a growing level of demand for weapons tied closely to population growth, grounded in a portrait of the role of small arms in Yemeni society. This approach to understanding the symbolic and communicative role of small arms at the community level strongly indicates that men purchase weapons as a symbol of manhood and to acquire the status of 'tribesman'—and all that this idea entails—in many regions of the country, particularly the mountainous north. This is less the case in the south (and the Yemeni island of Socotra), though the difference is only in degree and not in form. Although the capital city of Sana'a is effectively de-weaponized (at least in public) due to recent government initiatives, the great majority of city-dwellers are nevertheless tribesmen who will often own a small arm in their tribal region (if not necessarily possess in town) .

Eight values have been identified as the core of Yemeni tribalism: piety, honour, generosity (or hospitality), courage, self-control, autonomy, land, and ideologies of descent (Caton, 1990, pp. 28–32). These values are connected in a web of social relations that creates a useable system for the community. How each feeds the demand for small arms is touched on below, but readers should note that the presentation is purely for explanatory purposes.[61] Values cannot be laid flat and compared. Instead, they are mutually reinforcing, and to some extent cannot even be separated. Nevertheless, one can begin to see how values that are grounded on ideas, communicative practices, ethics, concepts of selfhood, and the place of individuals in societies, create a demand for small arms. One can also learn how social controls regulate individual and communal behaviour *vis-à-vis* these weapons.

Honour

If *sharaf* (honour) is a vital value in Yemeni tribal life, then the weapon is its symbol.

> The most noticeable thing about tribesmen at first glance is that they are armed. Each tribesman but the poorest owns a rifle (many have more than one), and in public each carries his rifle with him. Antique Turkish pieces and old service rifles are supplemented rather than replaced by modern self-loading and automatic rifles, some of which are all but the latest of their kind; and downstairs in many houses, among the grain and the goats, are heavy weapons such as mortars, machine guns and even light artillery. Weapons are a mark of tribesmen's standing. 'Weak', non-tribal people who live scattered about in tribal territory are not permitted to carry rifles, although many now own less ostentatious pistols, and men of learning, although they are permitted to carry rifles, seldom do so (Dresch, 1993, p. 38).

It is interesting to note that tribal sheikhs seldom carry a rifle, as it is the presence of bodyguards that communicates status.

One factor influencing demand for weapons in Yemen is wanting to communicate individual and collective tribal honour. This 'quality of honour' is marked by weapons and often seems focused on them' (Dresch, 1993, p. 39).

> [H]onour is exemplified to good advantage in heroic action, and sober reportage is not the essence. Two men may squabble over what to the outsider seems minor (a strayed goat, for instance, or a plot of land where little could grow) and settle down to sniping at each other from house to house. The *sharaf* is at stake. For the same reason their dispute may be spoken of as 'war', just as may a battle involving hundreds (Dresch, 1993, p. 43; 1986, p. 316).

Sharaf is a notion that extends far beyond responsibility for individual action and can be impinged upon by the moral actions of one's family. This is not a Kantian world of individual moral responsibility, but one where honour and moral standing in one's community are impacted by the actions of one's sons, daughters, wives, brothers, and even ancestors. In this sense, honour in the Yemeni worldview shares more in common with the rest of Asia than it does with the west.

For example, shared honour can be affected by the sexual conduct of one's daughter.

> A daughter's misbehaviour, and particularly her sexual misbehaviour once she is more than a small girl, can break a man's honour whether he is personally much interested in her or not. Sisters and daughters must therefore be 'controlled' and 'defended.' Their particular sexual honour, or *namus*, cannot be infringed without breaking their menfolk's more general honour, and *ya maksur al-namus* ('you whose sexual honour is broken', or whose women's honour is in doubt) is as much an insult as 'What's with your father?', though more often used jokingly. A tribesman's conspicuous weaponry is a statement of his ability to defend, among other things, the inviolability of his women (Dresch, 1993, p. 45).

Generosity (or hospitality)

Hospitality is a stereotype of the Middle Eastern personality. 'Arab hospitality' is indeed legendary and examples abound in books such as *A Thousand and One Nights* and pre-Islamic odes. 'This value is so well known to be sacrosanct among Arabs as not to require comment' (Caton, 1990, p. 28). In truth, the reputation is often well deserved, because a visitor from outside the region, not accustomed to being a guest in a local house, may even feel embarrassed at the generosity being shown. The best food, the best seat, and seemingly endless patience are often provided.

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But hospitality in Yemeni society is not only informal or 'from the heart', but also a social obligation that accompanies physical responsibility. It is examined with scrutiny by the other members in the community. 'The principle is accepted by tribesmen everywhere that *al-jar fi wajh mujawwir-hu:* the guest is "on the honour" of his protector, or in his charge, or must be defended by him' (Dresch, 1993, p. 59). The guest, therefore, is an honoured guest, not in the manner of being appreciated or respected, but one who is under the honour or obligation of the host. This obligation is extremely serious:

> [I]f the host killed his guest… it would be *ayb aswad* (black shame), for which, in the case of murder, at least eleven times the blood-money would be due to the victim's kin if amends could be made at all. The culprit's own kin might drive him out. They might even, so it is said, kill him themselves to wipe out the disgrace that his own action brought on them (Dresch, 1993, p. 60).[62]

The capacity and willingness to defend—at risk to his own person and family—the life and welfare of a guest is a matter of utmost importance in the mind of a tribesman. The practical capacity to exercise this obligation requires small arms, which in turn makes the social obligation a demand factor.

Courage

Courage, or *shaja'ah,* needs less explanation. While events and actions other than physical prowess can express courage, the concept is not dissimilar to the same idea in English. Courage may be shown in facing an adversary or thief, or else standing up for one's honour in the face of unfavourable odds. One direct means of accomplishing a public display of courage is through the application of force, or the threat of the application of force.

Self-control

This value, called *maruwah*, is slightly different than self-control in the strictest sense. Caton describes it instead as a mode of 'stringently controlling, though publicly venting one's passions…' (Caton, 1990, p. 31). When self-control is exercised, violent acts generally do not take place. Consequently, it might seem that small arms would be unnecessary to exercise the value of self-control. However, once *maruwah* is understood as something one wants to communicate to another person, it becomes clear that the apparent threat of violence is necessary if one wants to demonstrate restraint. For example, tapping the handle of one's dagger is one way to signal that another person's jokes or teasing is being pushed too far, and that self-control is being exercised.

Small arms are not strictly necessary for such actions at the individual level, but at the inter-tribal level, the show of arms followed by the immediate intervention of mediators is a means of publicly communicating this value through a highly formalized symbolic exchange of violent threats.

Autonomy

Autonomy is a desirable quality in both an individual's life and that of tribal life *vis-à-vis* any outside group that would attempt to exert control. It has been described as an emotional independence, but one that extends more importantly to economics and politics (Caton, 1990, p. 31). Political autonomy:

> can be threatened by the ambitions of a self-aggrandizing sheikh or the hegemonic drive of the central state. Rule over those who cherish their autonomy demands the art of persuasion, not coercion, for each person must be made to believe that he is a free agent. When conflict arises, therefore, one antagonist cannot bully another, for such an action would clearly violate his autonomy. Nor does one dare ask a powerful man or the state to intercede, out of fear that one would therefore become subject to his rule. The only way out of the dilemma is to seek restitution through the process of mediation with other equals. The mediators in turn cannot impose their decision on the contending parties without violating their autonomy. They must seek a consensus of opinion, freely given by the opponents and other observers at the dispute council, and then persuade the defendant to accept it; if he is honourable, he will. Just as feuding is a symbolic statement about honour, not actual coercion, so capitulation is a symbolic statement about mediation (Caton, 1990, p. 32).

The practical need to maintain autonomy *vis-à-vis* the state and other tribes is a small arms demand factor for the tribe itself, and helps explain the need for the large caches of weapons held by tribal sheikhs. Weapons serve to communicate the capacity for autonomy, and the laying down of weapons can communicate the symbolic willingness to accept mediation.

Land

The need to defend land requires an instrument that allows the territory to be controlled. Yemenis consider land as the foundation of their collective identity. Small arms are a vital component in any effort to protect land and exert control over its possession and use.

As all military strength is ultimately relative to the force one encounters, the presence of small arms in another tribe creates a need for small arms in one's own. This sort of arrangement has the makings of an arms race, whereby one side tries to catch up to and then surpass the military capability of another group. However, arms races are dependent on resources, and the assumption that decisions are made on a 'rational' basis about the appropriation of those resources.[63] One tank might cost the same as thousands of rifles, and might therefore be unnecessary or unwanted. Major conflagrations between tribes with heavy weapons—though not well documented—appear to be rather few and place tremendous strain in the relevant community.

Local arms races are often a result of a desire to protect and control land. However, a capacity to deter and to cause harm in the event that one's land is threatened are important factors for the tribesman, and a reason he will spend so much on a weapon. But such arms races are unlikely to become increasingly escalatory, because Yemeni tribes are generally not often interested in expansion or the use of war for permanent acquisition. Constant escalation is therefore unnecessary.

V. Conclusion

Many commentators suggest that poverty and underdevelopment promote the use of and demand for small arms. Yemen is indeed a poor and generally underdeveloped country with a low standard of living. It does, however, have extremely strong traditional mechanisms for conflict resolution, which act to regulate violence. Sometimes these rules of social behaviour encourage violence, and at other times restrain it. What appears clear, however, is that few people act outside those constraints.

Contrary to popular belief, Yemen does not have 50 million small arms and light weapons. Even though there is no hard data about the exact numbers of weapons in Yemen, results gained by using deductive methods place the figure at between six and nine million. The estimate produced here suggests 40 weapons per 100 people. It is unknown where exactly this places Yemen in the ranking of states, but it does not place it right at the top.

Most small arms appear to be imported legally from foreign suppliers including Argentina, Brazil, China, the Czech Republic, France, Germany, the Philippines, Poland, Portugal, South Africa, Spain, and the United States. Ammunition is known to be supplied by Brazil, China, the Czech Republic, Germany, the Philippines, Poland, the Russian Federation, South Africa, the United Kingdom, and the United States. Some observers also claim that weapons destined for Yemen are diverted to other countries, including countries under arms embargo.[64]

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With almost no naval capacity to ensure customs and import compliance around Yemen's vast coastline, smuggling to and from Africa is extremely likely, and could possibly be confirmed from site visits to residents and traders along the coast.

The country appears to have a continuing and growing demand for small arms. In Yemen, weapons demand is not primarily a function of poverty, ethnic conflict, the politics of exclusion, or other generalist explanations, but rather one of unique, deeply rooted identity and values. To understand the relationship of men to their weapons is to explore the foundations of Yemeni life.

Despite the great number of highly lethal weapons in Yemen, crime appears to be very low. The low level of criminal violence, as distinct from inter-communal or intra-communal violence, is primarily grounded on the strong and central role of tribal values in Yemeni life, moderated and refined by Islamic law and spiritual teachings. Violence in Yemen is deliberate. Although conflicts do indeed 'get out of hand', this sort of activity is frowned upon, and instead, violence within the tribe, and among tribes, is often laboriously regulated through clear social rules.

However, interviews conducted for this study strongly suggest that violence is rising and taking new forms including kidnapping for ransom, serial killing, seemingly random violence, and breaches of traditional sanctuary rules (such as those relating to killing in mosques). The rise in crime rates is perhaps best explained by the slow but growing process of urbanization in Yemen. As people move to the cities, their bonds with their tribes and communities are sometimes weakened, leading to fewer social controls on their behaviour. While crime may be facilitated by the availability of small arms, it very well may not. Indeed, fear of retribution remains very high, this hypothesis remains speculative.

Several methods, tools and techniques used in researching this paper might be applicable beyond the Yemeni experience and beneficial to other research. As regards developing national holding estimates, these included:

- Recognizing the difference between public and private gun cultures as an analytical tool;
- Recognizing that the people who live in public gun cultures are often keenly aware of how many weapons are in circulation in their community;
- Using local community knowledge to make small arms holdings estimates rather than relying on weak archival data or ungrounded deductive models;
- Developing co-operative relationships between researchers and local actors to create open knowledge of use to both the local community (or stakeholders) and the international community, while recognizing that certain answers are not necessarily of interest to the local community (for example, certain Yemenis might prefer to believe that their country has 50 million weapons rather than less than ten million);
- Differentiating between open and closed communities as defined by how porous the communal borders are as regards small arms transfers; and
- Using formal modelling or statistical analysis to create meaningful holdings estimates, which can be used for policy initiatives such as weapons collection programmes.

The method used here to understand the issue of social controls and demand issues in Yemen has led to the following more general conclusions about research approaches as regards small arms.

- The number of weapons in circulation does not alone predict whether a society will be stable or unstable;
- Without a locally relevant explanation for how poverty, lack of development, or other so-called intervening variables threaten social rules of behaviour and communicative practices concerning violence, correlation studies cannot, and indeed should not, be used to develop intervention strategies as their effects would be unpredictable;
- Overemphasis on the economic and development conditions in which violence takes place—while potentially very significant—may distract from other, more fundamental areas of consideration, such as how individuals make choices concerning whether to own a weapon, or when to use a weapon in an act of violence;
- The concept of violence and what constitutes acceptable or 'ethical' behaviour is not universal, and efforts to advocate for the peaceful resolution of conflict may be well informed by first understanding why violence is used as it is, and to what extent it is legitimated in the community; and
- Further small arms research into demand factors, holdings practices and social controls should focus on social institutions that are the root causes of peace in society, and not necessarily on the laws of the state—unless, of course, the state is the relevant social structure.

State control over small arms possession and use is extremely limited, and it is highly unlikely that the state will be able to encourage safe firearm possession and use through coercive means outside of the cities. There are few national laws on weapons possession, and those on the books are impotent outside the cities, even Sana'a. Nevertheless, public awareness campaigns could be effective if leaders of major non-state institutions—such as tribal elders and imams from local mosques—could be encouraged to address small arms storage and use. Such campaigns could be conducted through traditional means of information dissemination, such as audio cassettes, radio programmes, religious speeches in mosques, and even the use of poetry, which is a very rich form of local expression.

The risk of diversion or theft from tribal stocks may be far lower than in other societies fitting similar descriptions, as the consequences of theft in Yemen often means capital punishment, enforced not only by the victim of the theft, but by the family or tribe from whom the weapons were looted. Fear of retribution from the state, on the other hand, may be minimal or non-existent. Rumours circulate that numerous stockpile fires were deliberately set to conceal the sale of military weapons to third parties.

For Yemeni society to see a reduction in firearm possession and injury through co-operative means, there would need to be a rather dramatic change in the associational relations concerning ideas such as manhood, social standing, tribal strength, and weapons possession. Such a task would be daunting, and would require long-term co-operation between the state, tribal councils, and local mosques.[65] Programmes could be initiated that attempt to change tribal values about owning and using weapons. For example public awareness campaigns could encourage members of society to 'retire' the weapons of the dead rather than passing them on to other generations. Successful approaches may be built on the often-used arguments in Sana'a among the Yemeni urban and educated that carrying weapons is 'uncivilized', (a word used by various newspapers that find the current state of tribal conflict embarrassing and 'backwards'). The difficulty, however, will be fashioning a campaign that can play on tribal strengths—such as honour, courage, and self-control—without advancing an argument that sounds 'western', which is a derogatory term throughout the region as it signifies a lack of respect for Islam and Arab tradition. The question of what arguments will resonate within the tribal regions lies at the heart of any public awareness programme on this subject. More coercive approaches—such as the strengthening of the central government by western powers without consultation with the tribes—could ultimately backfire. This is not only because leadership and experience are lacking, but many Yemenis are opposed to centralized power and believe foreign values may threaten tribal life and Islamic society.

Such an endeavour, furthermore, is not likely to be successful unless the broader goals of the government to create a modern and effective central state can be seen as complementary to key characteristics of tribal and Islamic traditions. In short, tribes in the north are especially unlikely to disarm or consider changing weapons possession and use practices unless their cohesion, identity, and traditional forms of law can remain vital, or unless the tribe itself can be undermined as a viable social institution. Furthermore, there is a strong need to establish a respected and efficient judiciary with enforcement capacity. As independent, civil law unconnected to religious law is a foreign concept to much of the Islamic world—and may be seen as offensive and obtrusive—the problem of developing a unique 'civil society' lies at the heart of the state-building paradox in the Arab world.

Small arms initiatives in Yemen may best be focused in the near term on safety training—including weapons use, storage, and handling, if not actually shooting—and awareness campaigns that emphasize the tragedy and uselessness of many deaths that occur due to ignorance or carelessness. Storefronts observed by the author and those stores visited were noteworthy for the stockpiles being orderly and clean, but at high risk of theft or diversion. Few locks or protection systems are in place, at least in smaller shops. Likewise, the risk of accidental explosion or injury appears extremely high due to the casual manner in which weapons, ammunition, grenades, and ordnance are carried (loaded, often chambered, and with inconsistent use of safeties), handled, stored, and used. Even 'plinking' (i.e. firing at otherwise harmless targets like rocks or bottles) is often fraught with danger as Yemenis seldom practice even those minimal safeguards as practised on a firing range.

There is also a pressing need to ameliorate the relationships between tribes and security personnel in areas where tensions are being exacerbated due to poor handling of delicate situations. Security sector reform programmes could better train security staff to handle tense situations involving armed opponents. Under the real threat of state oppression or over-reaction, tribesmen will not disarm. On the other hand, if the state can begin to act as a trusted agent, and tribal values and social structures can be seen as complementary to modern practices, the state (as well as civil law) can be strengthened, allowing its orbit of influence to expand progressively with community acceptance.

Work by non-partisan NGOs could facilitate negotiations with the state and local tribes to try to increase access for humanitarian organizations and foster the development and economic initiatives that improve the welfare of the population. They could also be used to structure awareness programmes (with the aid of local and cultural experts) and to orchestrate voluntary weapons collection programmes. Yemenis have a tradition of being generally amenable to the use of mediators to resolve conflict, thereby making NGO activity quite possible.

In short, this paper concludes that small arms possession and use is governed in Yemen by complex rules of social behaviour and communication that ultimately come from, and in turn reinforce, the institutions that maintain the society's identity and cohesion over time. Because of the tribal values and the extremely strong social bonds of family and tribes as informed by Islamic law and tradition, people feel bound to the rules found in the community (or communities) because they provide structure, meaning, identity, stability, and predictability to life—all of which appear to be highly valued ideals in Yemeni society as reflected in local proverbs, poetry, and art. It is one's place in, and respect from, the tribal community that provides meaning. Without the tribe, as one man explained to the author, 'a man is nothing. He has nothing'.

Endnotes

[1] A lethality index is a weighted measure of a sample of weapons indicating the average firepower a given set of weapons is able to project as a function of its use to maximum design specification. Criteria include: cyclic rate of fire; ammunition storage capacity; ammunition type; weapon configuration (i.e. automatic, semi-automatic, single shot); and condition of weapon. Other indicators may be included as required. See the *Small Arms Survey 2002* (pp. 314–15).

[2] New evidence at Mahram Bilquis (the Temple of the Moon God) suggests that the temple is nearly 3,500 years old and may have been the place where the Queen of Sheba reigned. See Lemonick and Dorfman (2001).

[3] The relationship of national holdings to stockpiles is explained in Section III, Stockpiles and national holdings.

[4] <http://www.mapzones.com/world/middle_east/yemen/peopleindex.php>
<http://www.lonelyplanet.com/destinations/middle_east/yemen/environment.htm>

[5] <http://call.army.mil/products/handbook/02-8/02-8ch5.htm>

[6] <http://www.nationbynation.com/Yemen/Population.html>

[7] Izz Al-Din Said Al-Asbahy 2002, p. 117.

[8] <http://call.army.mil/products/handbook/02-8/02-8ch5.htm>

[9] <http://www.bartleby.com/65/ye/Yemen.html>

[10] <http://members.tripod.com/JayDism/yemen/ye6.html>

[11] This is a conservative estimate. It may be reasonable to adjust this age downward to 13 given more interview and group study data.

[12] The reliability of such figures is complicated by unclear or often incomparable definitions of what constitutes 'employment' in the non-market or non-monetary economy that exists in various regions of the country, and indeed in many parts of the world. The Social Science Research Council (1968) opened a short-lived discussion about what constituted 'work' around the world. 'After commenting on the blurred dividing lines between "work" and "leisure", attention is drawn to the fact that leisure, again, is not always easily differentiated from illness' (Bozeman, 1976, ch. 4, footnote 18).

[13] Calculations for this research are based on 2001 statistics obtained from the CIA *World Factbook*. The 2001 statistics are no longer available online, as they have been replaced by the 2002 statistics. See <http://www.cia.gov/cia/publications/factbook/geos/ym.html>

[14] The A*rab Human Development Report* is available at <http://www.undp.org/rbas/ahdr/>, p.143.

[15] The *Arab Human Development Report.*

[16] John F. Burns, writing for the *New York Times Service,* reported that the Yemeni government estimates 65 million weapons in Yemen. See Burns (2000).

[17] Interview with Renaud Detalle, Human Rights Officer, Office of the High Commissioner for Human Rights, United Nations, 2002.

[18] E-mail correspondence from Khaled Ismail Al-Akwa'a, Yemeni Ministry of Foreign Affairs, 4 June 2001.

[19] That other societies see Yemen as wild or uncivilized, for example, is further evidence that small arms have symbolic significance that is culturally situated, and is not universal.

[20] E-mail correspondence from Khaled Ismail Al-Akwa'a, Yemeni Ministry of Foreign Affairs, June 2001.

[21] This data is old and not all regions of Yemen were surveyed.

[22] Interview with member of the Military Attaché Organization in Sana'a, August 2001.

[23] Information in the COMTRADE database is based on information submitted by exporting states. Yemen did not submit information to the database.

[24] The term stockpiles is commonly used interchangeably with the term holdings, leading to some confusion. In this paper, attention will generally focus on the more comprehensive measure of national holdings, as it is the number of weapons on the territory of Yemen that is of primary interest.

[25] The only way for weapons to exit the global stockpile is through destruction (accidental or intentional).

[26] How, for example, does one classify the Tribal Levies of Saudi Arabia, the Tribal Force or *Firqat* in Oman, or the *Baseej* in Iran?

[27] At present, no formula for making such calculations has been produced, although the number of 'reintroduced weapons' is expected to be quite small (generally speaking), as weapons are seldom allowed to fall into disrepair on an extensive basis due to their military and financial value.

[28] The impact of attrition on total global stockpiles is important, but is also difficult to assess as it depends on highly idiosyncratic factors like maintenance, intensity of training, and the extent of operational deployment. See Small Arms Survey (2001, p. 77).

[29] Thanks to Benjamin L. Inker for statistical support.

[30] Interviews with Sudanese community workers, London, July 2002 and Egyptian small-business owners, Memphis, Egypt, July 2002.

[31] A newspaper article in *Al-Hayat,* 17 April 2001 reports that the price of pistols begins at USD 50 while a Russian Kalashnikov starts at USD 500. Interviews by the author found rather lower prices, which are listed here. USD 180 was a common estimate from around the country, though not all regions were systematically surveyed.

[32] Of roughly twenty people interviewed, no one could recall a significant price difference since the end of the civil war in 1994.

[33] 2001 figures from the *World Factbook.* This, of course, does not account for the distribution of wealth in the societies, or the GDP among that segment of the population most likely to purchase these weapons.

[34] See the *World Factbook* for the rate of population growth: <http://www.cia.gov/cia/publications/factbook/>.

[35] The *Arab Human Development Report* (2002, p. 37) provides a figure of 4.1 per cent growth for Yemen. The more conservative estimate is used in this study.

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[36] Ownership is a legal concern and implies a right to private property (which is not a universal concept), while possession is a *de facto* reality and an observable phenomenon. The two are used synonymously in this paper.

[37] Izz Al-Din Said Al-Asbahy, Director of the Centre of Information and Rehabilitation for Human Rights, confirmed that only males carry weapons and that fifteen is a reasonable and conservative estimate for the age of possession. See Izz Al-Din Said Al-Asbahy (2002, p. 118).

[38] This point is illustrative, not exhaustive. Gender definitions in terms of language in use require a far more thorough analysis, and should only be conducted by those who speak the local language. However, the point remains that a need to discuss word meanings must accommodate all surveys and inquiries in a society not native to the researcher. This is one of the many reasons global survey data is highly suspect.

[39] In recent years, however, the central government has been making efforts to control the possession and sale of weapons within Sana'a with evident success.

[40] The US Department of Energy, taking their estimates from the *Europa World Year Book,* estimates there are 92,000 troops, including army, navy, air force and paramilitary forces. The *Middle East Military Balance 2001,* estimates 110,000 including army, navy, air force, and the central security force. This was rounded off to 100,000 troops under arms.

[41] Further confirmation on this point was unavailable.

[42] Email correspondence with Khaled Ismail Al-Akwa'a, Ministry of Foreign Affairs, June 2001.

[43] Though a breakdown of US gun ownership by weapon type is not known, the large majority are pistols, revolvers, hunting rifles, collectibles, and shotguns. Fully automatic assault rifles, sub-machine guns, and machine guns are rare, and are illegal without special permits. Rocket propelled grenade-launchers and other light weapons are exceptionally rare and usually illegal, while in Yemen they are very common.

[44] The information from Interpol should be interpreted with caution. The Interpol General Secretariat merely reproduces the information sent to it by the states. The information is not processed, but is classified according to category of offence. The data gathered in these sets of statistics is not intended to be used as a basis for comparisons between different countries since the statistics cannot take account of the differences that exist between definitions of punishable acts in different national laws, the diversity of statistical methods, or the changes which may occur during the reference period and affect the data collected. Police statistics reflect reported crimes, but this only represents a fraction of the real level. Furthermore, the volume of crime not reported to the police actually depends, to a certain extent, on the action of the police and can vary with time, as well as from country to country.

[45] Interview with Major-General Husayn Muhammad Arab, Interior Minister, *al-Hayat,* 6 January 1998.

[46] Several of the western and Yemeni doctors and professionals interviewed claimed that the Interior Ministry has detailed records of gun-related crimes. These claims, however, have not yet been substantiated.

[47] Another potential source of unpublished information might be the Russian Federation. According to a local source with extensive knowledge of Russian involvement in Yemen, the Russian Federation has roughly 350 doctors still working in Yemen, who might have highly useful data about gunshot wounds and small arms related incidents.

[48] Interview with Les Eden, Operations Manager, Halliburton, Sana'a, August 2001.

[49] A useful source for anecdotal newspaper reports about security incidents in Yemen (translated into English)

is available at <http://www.al-bab.com/yemen/data/incident00.htm>. Until 2000 this service provided a daily summary of criminal or violent actions in Yemen as they were reported in Yemeni, regional, and international newspapers. Sources listed include (in no particular order): Associated Press; al-Jazirah satellite channel; al-Sharq al-Awsat; Yemen Times; al-Ayyam newspaper; al-Quds al-Arabi; al-Sahwa (an Islah party newspaper); al-Hayat; Reuters; al-Tariq; Agence France Presse; al-Bayan; al-Jamahir; al-Balagh; al-Umma; and al-Shoura.

This web site is not comprehensive, though it often provides a detailed summary of events with full citations. Although the reporting is irregular and unsystematic and therefore cannot be used to measure either criminality or small arms-related violence in Yemen as it, it should be seen as complementary to the official data provided to Interpol.

Nevertheless, insofar as the material presented is a reasonable presentation of the types of incidents that occur in Yemen, a great deal can be learned about the practice of small arms violence through the classification of news reports into different types of incidents and then looking for more detailed patterns among incidents of similar type.

[50] Three Koreans and two Chinese have been abducted and released since 1996.

[51] This section is informed strongly by the work of Paul Dresch.

[52] On 26–27 August 1998, the Consultative in Yemen met to address the matter of violence in the country. According to a detailed summary in the *Yemen Times* (1998), the idea that tribalism must be somehow overcome and replaced with the rule of state law was a common argument.

[53] International Alert is leading an academic outreach initiative to such specialists and is working to form co-operative relationships with academic departments and programmes for the purpose of creating more knowledge about traditional practices of violence and the role of technology (especially small arms) in those practices over time. See http://www.international-alert.org

[54] It is not clear whether the actual weapon that caused the injury is handed over as well.

[55] Special thanks to community leaders from Bayhan, Sharif Talal bin Saleh bin Hussein and Diane al Habieli for their knowledge and assistance in answering questions on this subject.

[56] This murder figure is over twice the total number of murders reported to Interpol by the Yemeni authorities in 1996, underscoring the impossibility of conducting impact assessments of Yemeni society using existing crime data.

[57] This section is heavily informed by the work of Steven Caton and Paul Dresch.

[58] Even in an extremely dangerous country such as Colombia there were 'only' 55.85 deaths per 100,000 (Small Arms Survey, 2001, p. 240). This number is high compared with the overall number of deaths by firearms in Australia (2.79) or South Korea (0.60). Nevertheless, this means that the chances of being shot in Colombia within a given year is only 0.00056 per cent—such a low level of occurrence that one might even wonder what all the fuss is about. But, of course, fear does not rise proportionately with statistical rates of occurrence.

[59] Violent use is distinguished from non-violent use, such as target shooting or hunting.

[60] Correspondence from Shelagh Weir, former Middle East Curator for the British Museum, presently research associate at the School of Oriental and African Studies, University of London; 10 June 2002.

[61] The values of piety and ideologies of descent are omitted because they are less straightforward reasons for small arms demand and use than the others.

[62] See also Dresch's own reference in Rossi (1948, p. 31).

[63] Rationality refers to a process of thinking in terms of cost and benefit, but as discussed at length, the means by which rationality is exercised can only be understood if the value system of the community is first understood.

[64] Source: *Warsaw Rzeczpospolita.* 2000. An arms dealer in Dhamar, Yemen, interviewed by the author in July 2001, backed up this claim, asserting that Yemeni merchants illegally re-export arms from Yemen to other Arab states and to countries in the Horn of Africa, including Somalia (presently under UN arms embargo).

[65] Highly coercive methods, such as those used in Communist South Yemen that deliberately tried to break apart tribal communities, could also work.

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A publication
of the Small Arms Survey