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Professional Ethics and Social Responsibility: Military Work and Peacebuilding

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Abstract: The paper considers a number of important questions related to the involvement of engineers in peacebuilding and military work, including the preference of many countries for high tech weapons based security over peacebuilding, whether and in what circumstances, if any, it is justified for engineers to be involved in military work; and how engineers can persuade their colleagues to apply their skills to support peacebuilding**.** It is introduced by an overview of what is meant by the term military work and the extent and consequences of the use of military technology worldwide. This is followed by the applications of different approaches and theories of ethics to discuss the questions presented in the introduction. The approaches and theories applied include considerations of micro-and macro-ethics, codes of ethics, virtue ethics, considerations of gender and paradigms and the ethical imperative. Initial insights include the importance of considering the associated context and the need to avoid othering, which can make different treatment of minority groups, including the use of high tech weapons against them, seem acceptable.

Keywords: peacebuilding, military work, context, othering, macroethics, ethical theories.

1. INTRODUCTION: MILITARY WORK

The term ‘military work’ will be used rather than the more commonly used term 'defence' work to try and avoid any assumptions about the nature of this work. It has been categorised both by the type of work and the degree of military involvement, with the latter categorisation giving (Hersh, 2000).

- Direct military applications paid for or funded by military sources.
- Dual purpose military and civilian applications.
- Civilian work with military funding.
- Research with unknown applications, some of which may be military.
- Work for a firm with some military contracts.
- Collateral work on devices that are not themselves weapons, but which support weapons use.

Military installations and suppliers have been categorised as follows (Ullmann, 1991):

- Firms that sell some of their usual products to the military.
- Contractors with up to 500 employers doing specialised work, for instance producing electronics and electromechanical components, that sell a significant proportion of their products to the military.
- Large companies with both military and nonmilitary divisions.
- Large military companies that almost exclusively produce military hardware such as weapons, naval vessels and military aircraft.
- Military bases.

In addition military research is carried out in universities and technical schools in many countries and many military establishments have research agreements with them covering a wide range of science and engineering areas (Hersh, 2000).

Unfortunately there has been a tendency for national security to focus on military preparedness, including advanced weapons systems (Jackson, 2011) rather than peacebuilding and resolving problems which lead to instability (Abbott et al., 2006). The critical role of engineers and scientists in developing weapons technologies and maintaining military preparedness raises important ethical issues related to military research and development, the division of resources from civilian technologies and the contribution of these technologies to arms races. Despite the diversity and range of destructive power from small arms to nuclear armed and powered submarines and of existing military technologies, scientists and engineers are researching and developing new military systems. They also have significant involvement in the production and maintenance of existing weapons and other military systems (Hersh, 2015a).

Despite austerity measures in some countries global military spending remains high at about $1756 billion and an estimated 2.5% of global GDP in 2012 (Perlo-Freeman, 2013; Perlo-Freeman et al., 2013). Despite the slow decline in the number and scale of conflicts and the resulting deaths, the rate of successful conflict resolution has also dropped leading to increasing numbers of protracted or recurring conflicts (Melvin, 2012). There were 248 armed conflicts in 153 locations in 1945 - 2011, an estimated 50-51 million deaths, including of civilians, in 1945-2000 and an estimated 214-226 million deaths due to national political decision making, including genocide, starvations and deaths in prison camps

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and conflict in the twentieth century (Leitenberg, 2001). Clearly nuclear and other weapons systems have not kept the peace or prevented human rights abuses.

At one end of the scale are nuclear weapons, including the Trident nuclear missiles stationed at Faslane about 45 kilometres north west of Glasgow (where I live and work). They are aimed at 'flattening Moscow at the press of a button'. Using all the 40 nuclear warheads normally carried by a Trident submarine would result in 5.4 million deaths, with 95% casualties within 1.6 kilometres of each explosion. Nearly 800,000 of the deaths would be children and young people under 18. Since the casualties would include large numbers of doctors and nurses and most large hospitals would either be destroyed or severely damaged, there would be little if any medical aid within the city. Very high levels of radioactivity and extensive fires would make it very difficult and hazardous to bring in medical or other aid from outside (Ainslie, 2013).

All armed forces use small arms and light weapons, of which there are more than 600 million in circulation worldwide (Pike, 2013), particularly in Africa, with most of the weapons used there imported from outside (IANSA et al,. 2007). They have been responsible for the majority (60 - 90%) of direct conflict deaths (Wille with Krause, 2005) and contributed to disease, starvation and the destruction of health service infrastructure, resulting in a large number of indirect conflict deaths (Krause with Mutimer, 2005). It is also largely guns that have been used to force villagers from their homes (Shah, 2006). This implies that engineers in other countries, including Europe and the USA, have had a significant role in the development and manufacture of the small arms and light weapons used to such devastating effect in Africa and elsewhere, including in significant numbers of homicides in the USA.

The three-component model of the causes of violent conflict (Hersh, 2013) has the components of an issue of dispute, a context which favours instability and discourages peaceful settlement and a trigger event or circumstance. This shows the importance of both resolving the underlying issues which could lead to conflict and working on the context to discourage conflict as an approach to resolving problems. Climate change; competition over resources particularly oil and water; growing inequality and marginalization; and global militarism have been considered the main threats to global security (Abbott et al., 2006). However, rather than building peace or trying to resolve the problems that cause instability many countries, including the USA, are continuing to base their security on high technology weapons. This is despite evidence of the inadequacies of this approach for long term security, avoiding the development of current problems into violent conflict or resolving current major (violent) conflicts. Instead, real security will require the solution of the serious problems that contribute to instability, including climate change, global poverty, access to clean water and energy sources, loss of biodiversity and environmental degradation (Langley et al., 2005). Engineers clearly have experience and expertise to contribute and can play an important role, but a change of political priorities will be required to make the necessary resources available. This does not mean that engineers cannot work on these problems at a smaller scale. They can also join campaigns with engineers and others to support peacebuilding and provide their knowledge, experience and expertise, as well as the support of their institutions, to solve problems relating to the environment, resources and inequalities.

This gives rise to a number of important questions for ethical engineers interested in world peace and social justice:

1. How best can they use their experience and expertise to support peacebuilding?
2. What role, if any, do weapons systems have in maintaining stability and peace?
3. In what circumstances, if any, is it justified for engineers to be involved in military work and, if any, what type of work?
4. Why do many countries prefer security based on high technology weapons rather than peacebuilding and resolving problems?
5. How can engineers convince their colleagues of the need to use their expertise and experience to support peacebuilding?

The paper will apply a number of different theories and approaches to ethics to investigate these questions and obtain insight into them. However, considerable further work will be required to obtain more definitive answers.

2. ETHICAL ENGINEERING, MACRO AND MICRO ETHICS

The terms micro- and macro-ethics have been used to indicate respectively a focus on the ethical issues involved in relationships between individual engineers and their clients, colleagues and employers; and the collective social responsibility of the engineering profession (Ladd, 1980). This could also be conceptualised as process related issues resulting from the day-to-day practice of the profession and the wider social, environmental ethical issues and responsibilities of engineering and engineers. It should include decisions on which projects should not be undertaken either by society as a whole or by individual engineers.

Engineering ethics research and teaching have generally focused on microethics and individual issues rather than macroethics and wider issues (Herkert, 2001; Winner, 1990), including those related to the implications of the development and use of particular technologies and the role and (social and environmental) responsibilities of engineering. In the context of professional ethics, there is increasing awareness of ethical and social responsibility issues with regard to how engineers carry out their jobs, but considerably less so with regard to the nature of these jobs and what jobs are and are not ethical. The nature of the jobs engineers do relates to the wider issues of the role of engineering and technology in society. 'Ethical responsibility ... must ... include a willingness to engage others in the difficult work of defining what the crucial choices are that confront technological society and how intelligently to confront them' (Winner, 1990, p. 62). I would suggest that these crucial choices include how to use technology to encourage and support social justice and peaceful coexistence without the need for weapons systems.