

Offensive insecurity: the role of science and technology in UK security strategies

Stuart Parkinson, Barnaby Pace and Philip Webber summarise the findings of SGR's latest report, which uncovers detailed new data on the funding priorities for new military technologies and compares these with funding for civilian R&D that helps to tackle the roots of conflict.

UK government funding of military research and development (R&D) has long been among the highest in the world. However, up to now, there has been limited publicly available information on the key programmes that have been funded, or analysis of what alternative R&D spending patterns might provide increased security in the short and long term. SGR's new report – entitled *Offensive Insecurity*¹ – attempts to fill these gaps.

UK military policy and R&D spending

According to official statistics, the Ministry of Defence (MoD) spent on average £1.8bn per year on R&D in the three-year period, 2008-11. While this is significantly less than Cold War budgets, it still represents more than one-sixth of UK public spending on R&D – a fraction that is about three times higher than that of the major industrial nations of Germany and Japan. The main reason for this comparatively high spend is that the UK, unlike these other countries, has much more aggressive military policies and continues to develop major offensive weapons such as strike aircraft, long-range submarines and nuclear weapons.

This approach is, however, increasingly out of step with certain key government strategy documents. For example, the 2010 National Security Strategy (NSS) states that the UK's security is dependent on a much wider range of factors than just conventional military threats. Indeed, the risk of a conventional military attack on the UK was classified at the lowest level – 'Tier Three' – of the new risk hierarchy. The document also acknowledges that more action is needed to tackle the root causes of security problems.

Nevertheless, the Strategic Defence and Security Review (SDSR) – released in tandem with the NSS – made it clear that, while cuts to some major military technology systems were to be undertaken to help the government's budget deficit, a main military task would continue to be "defending our interests by projecting power". This was despite the major failings of recent 'military intervention' involving UK forces – especially

Box 1. Main findings

NB: All data is based on the three-year period 2008-11

- The UK government's military R&D spending is heavily focused on developing 'offensive' weapons systems. We estimated that 76% of this spending was on technology programmes whose main role is to 'project force' far from British shores.
- The six largest areas of military R&D were: strike planes; attack helicopters; long-range submarines; nuclear weapons; nuclear propulsion (for submarines); and unmanned aerial vehicles (drones).
- Savings of at least £1 billion per year could be made in public R&D spending by taking steps to move to a less aggressive defence policy, where the development of the main offensive military technologies was cut.
- The MoD was unable to provide a breakdown by programme of about £500 million per year – over one quarter of its R&D spending, despite repeated questioning.
- The MoD's annual spending on R&D was between two and seven times the civilian public spending on R&D that helps to tackle the root causes of conflict (depending on which civilian sources are counted within the assessment).
- To further illustrate this imbalance, comparative examples of total R&D spending over three financial years are:
 - o Offensive weapons systems: £1,565m on combat aircraft; and £991m on long-range submarines (including their nuclear weapons);
 - o Sustainable security: £626m for international development, and £179m on renewable energy.

the very large numbers of civilian casualties and huge refugee crises in Iraq and Afghanistan, and the way in which such consequences provide a fertile ground for recruitment and development of terrorist groups.

Also apparent was the short time-horizon considered, especially in the SDSR. A longer-term view of security risks should lead to greater emphasis being placed on preventative action.

The 'projecting power' perspective is also the backbone of the 2012 *National Security Through Technology* white paper. This document is almost entirely focused on the development of new military technologies and the industries that provide them. It strongly supports the export of arms and other military technologies to try to help lower the costs to the UK government of procuring new equipment. The document downplays the security problems, despite strong evidence that UK arms exports fuel insecurity and oppression overseas. R&D to help understand and tackle wider security problems is virtually ignored.

Analysing new military R&D data

We obtained new data from the MoD on its R&D programmes using several freedom of information (FOI) requests. This data provided a breakdown by technology programme of approximately £1.3bn per year (out of about £1.8bn/y) of MoD R&D spending for the three-year period, 2008-11. Rather disturbingly, the MoD could not give a breakdown by programme level for £500m per year. The FOI data is summarised as follows.

Table 1 shows the MoD's R&D spending for its top six technology areas over the three-year period. All six technology areas are an integral part of the military capability to 'project force' over long range.

Based on policy analysis of military technologies and force structures – taking into account concepts such as 'non-offensive defence' – we classified the £1.3bn per year of documented military R&D spending from 2008-11 into three categories: offensive, defensive, and general. This analysis concluded that approximately 76% was spent on offensive systems (including sub-systems). Only 24% was spent on systems whose main application could be said to be defensive or general. This analysis demonstrates that the development of military technologies with an offensive, long-range capability dominates the MoD's R&D priorities, contrary to what advocates often claim.

Considering the alternatives

Given the failings of the UK's current military and foreign policy, a key focus of this study has been to estimate the R&D spending that helps to understand and tackle the root causes of insecurity. For this, we used the concept of 'sustainable security', which identifies four main long-term drivers of insecurity: climate change; competition for resources; global militarisation (including the arms trade); and the marginalisation of the majority world (including international poverty and social inequality).

We examined security-related R&D spending by civilian government departments and the seven

Military technology area	Total R&D spending, 2008-11 (£m)
Combat (strike) planes (including Typhoon/Eurofighter, Joint Combat Aircraft/F-35, Tornado)	771
Combat (attack) helicopters (including Lynx, Apache, Merlin)	599
Long-range submarines (hunter-killer and nuclear-armed)	392
Nuclear weapons (carried by submarines)	317
Nuclear propulsion (for submarines)	282
Unmanned aerial systems (drones)	195

Table 1. Total Ministry of Defence R&D spending on the top six military technology areas for the three-year period, 2008-11 (cash terms)

research councils. Within our estimates, we included R&D spending on a wide range of activities, including international development and poverty alleviation, sustainable energy technologies, food security, international relations, natural resource management, biodiversity, environmental hazards, sustainable consumption, and other measures to mitigate and adapt to climate change. The average annual spending during the three-year period was £961m.

Despite including a very broad range of public R&D within our classification, the total spending related to sustainable security is still only equivalent to about half of the government's annual military R&D spending during this period, as shown in Figure 1. This Figure also shows the breakdown of annual

military R&D spending according to the three classifications – offensive, defensive and general – discussed above (assuming that the breakdown of the MoD's total R&D spending is the same as that estimated from the data from the freedom of information responses). This again demonstrates the dominance of traditional military approaches – especially offensive weapons systems – within public funding of security-related R&D in the UK.

It should also be noted that all the military R&D spending comes directly from a single government department (the MoD) with strong ties to central government decision-making, whereas most of the sustainable security R&D funding (74%) is spent by research councils, and does not have such a strong

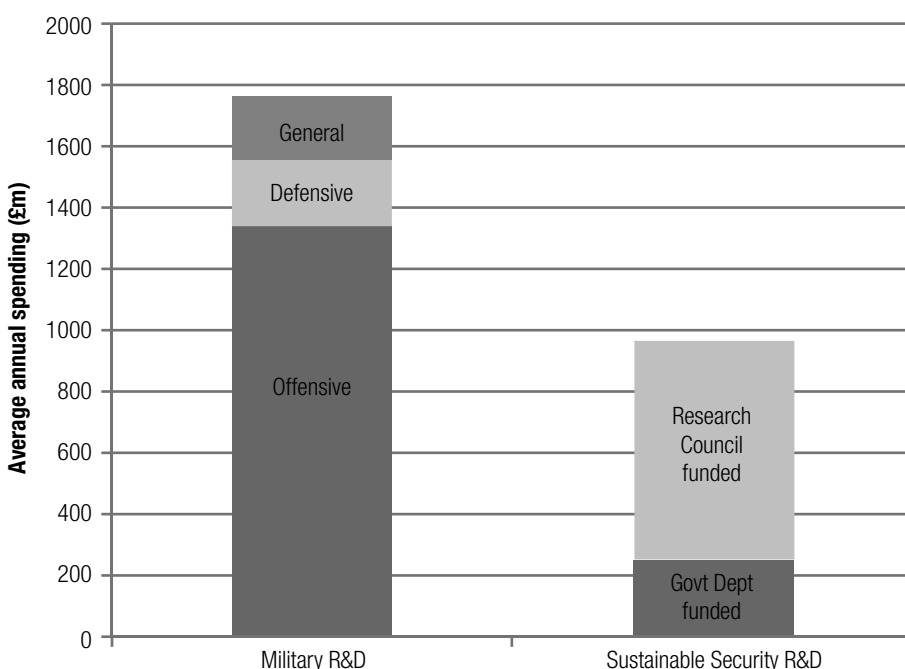


Figure 1. Comparison of average annual UK public spending on military R&D and sustainable security R&D, 2008-11 (cash terms). Military R&D is broken down by application; sustainable security R&D is broken down by funding source (see text).

link with policy decisions (also shown in Figure 1). If we compare only the annual R&D spending that comes *directly* from government departments, we find the military spending is *seven* times larger than that related to sustainable security.

By moving to a less aggressive defence policy, funding for the development of major offensive weapons systems could be cut by at least £1 billion per year. Some of these savings could be redirected to R&D that contributes to sustainable security.

Other issues

The report also discussed two other issues related to military R&D. Firstly, as mentioned earlier there were still areas of spending that were opaque – amounting to about £500m per year. This undermines public accountability. Secondly, the report briefly examined the economic and employment issues related to military R&D. In short, we found very little evidence to justify military R&D spending on economic and employment grounds. For example, analysis of a broad range of alternative civilian sectors, including clean energy, education and health care, indicates that employment benefits are much greater in the civilian areas.

A major shift in R&D spending

In our view, there is a very strong case for a large cut in military R&D – especially that focused on nuclear weapons, long-range strike aircraft, aircraft carriers and long-range submarines. Equally, there is a strong case for increasing spending on R&D related to tackling the roots of conflict, such as arms control and disarmament, poverty alleviation, energy conservation and renewable energy. Using this R&D more widely in policy-making would galvanise deeper, positive change in the UK's approach to insecurity. We need to push the government to pursue this option. There would be economic, social and environmental benefits – and it would provide a path towards genuine security.

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Dr Philip Webber is Chair of SGR. All are co-authors of *Offensive Insecurity*.

Reference

- Parkinson S, Pace B, Webber P (2013). *Offensive Insecurity: The role of science and technology in UK security strategies*. SGR. <http://www.sgr.org.uk/publications/offensive-insecurity>