

**2010 Lewis Fry Richardson Lifetime Achievement Award: Ron P. Smith  
and the Economics of War and Peace<sup>1</sup>**

Vincenzo Bove  
Department of Government,  
University of Essex  
Wivenhoe Park CO4 3SQ  
Colchester United Kingdom  
[vbove@essex.ac.uk](mailto:vbove@essex.ac.uk)

Kristian Skrede Gleditsch  
Department of Government,  
University of Essex  
Wivenhoe Park CO4 3SQ  
Colchester United Kingdom  
[ksg@essex.ac.uk](mailto:ksg@essex.ac.uk)

*Tel:* +44 (0)1206 87 25 17

*Fax:* +44 (0)1206 87 32 34

---

<sup>1</sup> We wish to thank Raul Caruso, Elisa Cavatorta, Paul Dunne, Nils Petter Gleditsch, Paul Levine, and Gerald Schneider for their helpful comments and advices. All remaining errors are our own.

## 1. Introduction

Ron P. Smith is the winner of the 2010 Lewis Fry Richardson Lifetime Achievement Award, which honors exemplary scholarly contributions to the scientific study of militarized conflict by a researcher based in Europe for most of his or her career. The award was supported by the European Consortium for Political Research Standing Group on Analytical Politics and Public Choice and the Standing Group on Political Geography.<sup>1</sup> This essay summarizes Smith's scholarly achievements, with special emphasis on his contributions to the scientific study of conflict and peace.

Ron P. Smith is a leading defence economist, whose research is well known to scholars in Conflict Research and Economics. He ranks among the top 5% economists in the world, based on 29 criteria compiled by the Research Papers in Economics (RePEc) project, including citation counts (see <http://ideas.repec.org/top/top.person.windex.html>). His research has laid the foundations for the economic analysis of the military sector. His numerous books and articles on defence economics have become essential references for academics, students, practitioners, as well as many interested lay persons beyond traditional academic institutions. By exploring the interaction between the military and the economy, Smith has also provided insightful contributions to military planning. A selected list of his main works ranked by the total number of total citations is displayed in Table 1.

Smith has always adhered to rigorous mathematical and statistical methods to analyse security and peace issues, very much in the spirit of Lewis Fry Richardson. Smith has also made important contributions to research on Richardson's action-reaction model of arms races, in particular through his efforts explain the temporal dynamics in military expenditure between potential enemies. However, Smith also displays critical engagement with statistical methods, urging researchers to eschew excessive formalism and always question standard approaches, and to instead focus more closely on substantive interpretation and understanding the assumptions underlying models. Richardson and Smith are both scholars who have made important interdisciplinary contributions beyond their original fields. Richardson was trained as a Physicist, but made important contributions to fields such as Meteorology and Applied Mathematics in addition to Conflict Research. Likewise, Smith is an Economist, who has also made important contributions to Conflict Research, Statistics, and Political Economy.

---

<sup>1</sup> A description of the Richardson award and a list of previous winners can be found at [http://privatewww.essex.ac.uk/~ksg/richardson\\_award.html](http://privatewww.essex.ac.uk/~ksg/richardson_award.html).

In this essay, we first briefly summarize Smith's academic career, and then review some selected key scholarly contributions to the scientific analysis of conflict and peace<sup>2</sup>.

Tab 1. Selected works by Ron P. Smith ranked by number of citations				
Title		Year	N. of citations*	
Estimating long-run relationships from dynamic heterogeneous panels	Journal of Econometrics	1995	1382	
Pooled Mean Group Estimation of Dynamic Heterogeneous Panels	Journal of the American Statistical Association	1999	747	
Military Expenditure and Capitalism	Cambridge Journal of Economics	1977	232	
Military expenditure and growth in less developed countries	Journal of Conflict Resolution	1983	228	
The Demand for Military Expenditure	The Economic Journal	1980	110	
Models of Military Expenditure	Journal of Applied Econometrics	1989	95	
The Economics of Militarism	Pluto	1983	82	
Models of Military Expenditure and Growth: A Critical Review	Defence and Peace Economics	2005	77	
The Demand for Military Expenditure	Handbook of Defence Economics	1995	64	
Military expenditure and unemployment in the OECD	Defence and Peace Economics	1990	56	
The Peace Dividend	North-Holland	1996	54	
* Source: Harzing, A.W. (2007) <i>Publish or Perish</i> , available from <a href="http://www.harzing.com/pop.htm">http://www.harzing.com/pop.htm</a> [19 November 2011]				

<sup>2</sup> On a personal note, Bove is a former PhD student of Smith, while Gleditsch as a PhD student benefited from several discussions when Smith was a visiting scholar at the University of Colorado.

## **2. Career**

Smith became an assistant lecturer in statistics at the University of Cambridge in 1972, following previous studies at the same University. Most of his career has been at Birkbeck College, where he was first appointed lecturer in 1976 and then professor of applied economics in 1985. At Birkbeck, he has twice chaired the Department (1988-1991 and 1994-97), served as Dean of Faculty of Economics, Chair of Computer Committee and Pro-Vice-Master 1998-2003, and he has chaired the Higher Degrees Committee for Economics at the University of London. He has held numerous visiting positions, including the Brookings Institution (1974), London Business School (1992) and the University of Colorado at Boulder (1997-8).

Smith has organized the postgraduate econometrics training at Birkbeck since the 1970s. He has also provided training in econometrics to various public and private sector organisations in the UK, including the Treasury and the Bank of England. He has taught defence economics at the Royal College of Defence Studies and the UK Joint Services Command and Staff College (JSCSC), two military academic institutions that train the future commanders and senior staff officers of all three UK Armed Services and many foreign countries. He has supervised more than 35 completed doctoral dissertations.

Smith has received several research grants and contracts from the UK Economic and Social Research Council (ESRC), the United Nations, the World Bank and the European Central Bank. He has served as an advisor to the ESRC and the UK Treasury Academic Panel, and done consultancies on defence topics for many British institutions including the UK National Audit Office. He is an associate fellow of the Royal United Services Institute for defence and security studies, an influential London-based think tank for which he has written a number of cutting edge defence and security papers. He is a long-standing member of the editorial board of *Defence and Peace Economics*, the leading journal specialising in the economic analysis of conflict and the defence industry. He has also served on the editorial boards of *Applied Economics*, *Journal of Applied Econometrics*, *Journal of Peace Research*, and *Journal of Conflict Resolution*.

## **4. Scholarly Contributions**

Smith has published over 100 items over his long research career. It is impossible in a short essay like this to offer full justice to the range of Smith's extensive scientific research, spanning four decades and a large number of topics. We will focus on a number of key research areas relevant to the scientific study of militarized conflict, very much in the spirit of Richardson's original research, and the motivation for this lifetime achievement award.

Smith (1977)'s first work on the economic and strategic role of military expenditure applied a Marxist perspective. Smith argued that military expenditure is necessary to maintain capitalism as a viable international system. Military expenditure remained high due to the many threats the system faced, including the existence of an alternative socialist mode of production in Asia and Eastern Europe, the strength of national liberation movements in the periphery, and the potential for conflict with the proletariat in the core countries. The distribution of military expenditure between the advanced capitalist countries was determined by their rivalries and the hegemonic position of the USA.

However, Smith's research explicitly rejected the so-called "Keynesian militarism" thesis proposed by many Marxists, which sees military spending as driven by the need to compensate for the under-consumption inherent in capitalism and maintain economic growth. Smith, on the contrary, argued that military expenditure imposed substantial costs by lowering accumulation of capital and decreasing growth.<sup>3</sup>

This leads to a second research area where Smith has made important contributions, namely the economic consequences of military expenditures. Smith (1980b) found evidence of detrimental effects of military spending on investments, using data for 14 large OECD countries between 1954 and 1973. Later, Deger and Smith (1983) found similar evidence for negative effects of military expenditures on growth in less developed countries, suggesting that an excessive military burden can undermine development.

This in turn gave way to subsequent research assessing the economic consequences of reductions in military spending. Dunne and Smith (1984) argued that military expenditure imposed a substantial burden and the high levels incurred over the post-war period had contributed to the low UK rate of growth. Their study found that a reduction in military expenditure to 3-5 % of GDP, matched by compensating programmes to leave total public expenditure unchanged, would result in a net increase in employment of about 100,000 jobs. This remains a topical issue, and the study suggests that disarmament can make a contribution towards solving pressing economic problems in an era of lower government revenue, through freeing up scarce scientific and technical resources. As they pointed out in the same work, "given a favourable political context and appropriate policies for conversion, no major problems would be involved in the transition" (Dunne and Smith, 1984, p.309)

The attention to modelling and understanding the basis for the inferences drawn is a recurrent theme in Smith's research. For example, his frequently-cited article on the demand for military expenditure (Smith, 1980a) - followed by a correction (Smith, 1987) - laid the foundations for subsequent research on models of military spending and empirical applications. It is far

---

<sup>3</sup> In fact, he has always adopted an eclectic theoretical position; some of his early works have been Marxist (e.g. Smith, 1977), while other rooted in the neoclassical tradition (Smith, 1980a), leading him to be labelled a "marxo-marginalist".

from straightforward to describe the process generating changes in the share of a country's output allocated to military expenditure. In a review of the literature on military spending, Smith (1989) found a variety of irreconcilable results. He highlighted the methodological issues involved in model comparison and evaluation, and proposed a new model, dominating alternative specifications. However, Smith (1989, 357) stressed that "it is probably wise to retain a degree of scepticism about the specific results until it has been shown that the model continues to work, and has wider applicability". The effect of military expenditure on employment provides another example. Many have feared that reductions in military expenditure could give rise to higher average unemployment. However, Dunne and Smith (1990) considered long historical series for the USA and the UK and post-war data for 11 OECD countries, and found no evidence that the share of military expenditure is a significant influence on the unemployment rate. This research helps us understand the links between defence spending and economic growth as well as social well-being, which in turn can help inform policy.

Another important contribution here is the Fontanel and Smith (1985) comparative study of the defence effort in France and Britain. This study noted a number of similarities between the two states, who since World War II had both surrendered empires, acquired nuclear forces, fought distant wars, maintained troops in Germany, and devoted a share of output to defence above the European average. Although the strategic similarities made a comparison meaningful, the policy differences were striking and revealing. France had grown faster, maintained a different balance between nuclear and conventional forces, followed a different arms export policy, pursued autonomy from the USA, and spent less on defence in relation to GDP. This detailed comparison illuminated the costs and benefits of the choices made by the two countries.

As the Cold War was coming to an end, Smith et al. (1985) started working on another issue of wide general interest, namely the arms trade and its wider economic implications. The international trade in arms had received growing interest since the 1980s, and a number of political concerns such as security implications and human rights have attracted a great deal of attention. However, economic concerns linked to the trade, jobs and profits should also be considered. Smith has published a series of articles on these issues. Smith et al. (1985) suggested that, in purely commercial terms, promoting arms exports is not a profitable proposition. Why then do governments in supplier countries so heavily promote arms exports? The article showed that the initial momentum was provided by strategic and political objectives, but the growing dependence of particular interests on arms exports created a powerful economic lobby, despite the lack of commercial logic. These economic pressures tend to undermine the political and strategic objectives.

Levine and Smith (1995) developed a formal theoretical model to evaluate the benefits and sustainability of a proposed arms control regime, which involves establishing a cartel of suppliers, taxing arms exports and distributing the proceeds to recipients. The authors showed how, in certain

circumstances, a particular arms control regime could benefit both the producers and buyers of major weapons systems. Although they recognised that maintaining a cartel in the face of political conflict among the suppliers might be impracticable, their formal results showed the possibility for Pareto improving policies and suggested that greater attention to these problems could have significant payoffs. A study of the stability of regional arms control regimes demonstrated that the price of arms has a major effect (Levine and Smith, 1997). However, economics alone could not represent the interaction between arms races and regional arms trade. In their model, the choice of the appropriate parameter values needed to be relevant to important real cases, and as such, interdisciplinary cooperation could help reach a broader consensus. Levine and Smith (1997, p.653) stressed how “there may be large pay-offs if those traditional rivals, the mathematical modellers, and the specialists in historical case studies got together and tried to achieve a cooperative solution to the analysis of particular arms races”.

The end of the Cold War led to a large fall in military expenditures and the demand for arms, which in turn created great expectations of a “Peace Dividend”. Smith co-edited a book on the studies of the welfare gains from disarmament (Gleditsch et al., 1996), which combined his interests in military expenditures and the arms trade. The evolution of the international arms market forced arms producers to choose whether to convert, diversify, divest, co-operate or concentrate. As Smith (2001) pointed out, these choices, by governments and firms, produced a large increase in concentration. The share of the five largest firms increased from just over 20% in 1990 to 45% in 1998, and it has increased further since then.

Reflecting the increased attention to international security implication of the arms trade, Smith has turned his attention to arms export controls and proliferation. Levine et al. (1997) analyze the policy issues faced by EU members and whether a common control regime is needed to harmonize their regulation of arms exports. Levine and Smith (2000) analysed dynamic decision problem faced by a country deciding whether to make an irreversible investment in arms production capability under uncertainty. Through an integration of economic and security objectives, the article provided a framework to analyse the institutions governing the arms trade, particularly its domestic and international regulatory regimes and market structures.

Smith has also made contributions to the empirical analysis of arms races, inspired by Richardson’s action-reaction models. Despite numerous empirical studies of arms races, little evidence has actually been found for action-reaction dynamics in the original Richardson model. Smith et al. (2000) provide an alternative effort to evaluate the Greek-Turkish arms race through two-by-two games such as the Prisoner’s Dilemma. A further attempt by Dunne et al. (2005a) found evidence of some form of cointegration between the military expenditures of Greece and Turkey, but not resembling a Richardson type arms race. Smith and Tasiran (2005) developed a better defined demand function of the form implicitly assumed in much of the prior

theoretical work. Levine and Smith (2003) explore arms export controls in relation to emerging domestic producers and provides various arms race modelling applications. In his last paper on this topic, Smith and Tasiran (2010) try to estimate the factors that determine the elasticity of arms imports to military expenditures.

Smith's more recent academic research examines the defence industrial base, or a country's decision to maintain different military systems (Garcia-Alonso et al., 2007). Furthermore, Smith has returned to the impact of military expenditure on economic growth. Dunne et al. (2005b) examine issues and limitations in the Feder-Ram model, commonly used in the defence economics literature, and suggest that alternative theoretical models seem more promising avenues for future research. Smith (2000) examines military expenditure and globalization. Dunne et al. (2006) examine the complexity of contemporary war scenarios through modelling asymmetric conflict. In a notable recent book, Smith (2009) develops a broad understanding of the interaction of the military and the economy, i.e., power and money, in the evolution of the modern world. While military power needs money to survive, economic development is often shaped by military conflict. Smith underlines how finance and fighting are driven by the same basic human motives, namely fear and greed. The book was shortlisted for the Duke of Westminster's Medal for Military Literature, a prize awarded for notable contributions to the study of international and national security and defence.<sup>4</sup>

Beyond his research in defence economics, Smith is also a highly respected applied economist, and he has made notable contributions to econometrics, including his research with Hashem Pesaran on estimating long-run relationships in dynamic panel data for example (Pesaran and Smith, 1995), a new procedure for heterogeneous dynamic panel data (Pesaran et al. , 1999), and contributions to the problem of identification (Dees et al. , 2009).<sup>5</sup> However, Smith has always raised concerns over the possible limitations of "quantitative peace research", such as the over-reliance on ritualistic formal rules such as the excessive emphasis on statistical significance and the lack of attention to the replicability of the results. Notably, Smith (1998) stresses how these problems are augmented by the academic incentives, which often emphasise technique at the expense of substance. In Smith's view, more emphasis on substantive issues and less on the mechanical application of rule-based techniques, can help enhance the contributions of quantitative peace research.

---

<sup>4</sup> Smith and Smith (1983) is another example of Smith's ability to explain the issues surrounding defence economics and militarized conflicts in terms that a general audience can easily understand

<sup>5</sup> Among his most highly cited paper, there is also one contribution to the economics of sport (Smith and Szymanski, 1997). This highlights his remarkable versatility in several fields of economics.



## 5. Concluding Remarks

In this article we have highlighted the impressive contributions of Smith to defense economics and the scientific analysis of militarized conflict. Smith is a leading defence economist, whose research is well known to scholars in Conflict Research and Economics. His outstanding research output on defence and peace economics has become essential references for number of academics, students, practitioners, as well as many interested lay persons beyond traditional academic institutions. Smith has always adhered to rigorous mathematical and statistical methods to analyse security and peace issues, very much in the spirit of Lewis Fry Richardson. By exploring the interaction between the military and the economy, Smith has also provided insightful contributions to military planning. These achievements make Smith a most deserving recipient for the 2010 Lewis Fry Richardson lifetime achievement award.

## References

- DEES, S., PESARAN, M.H., SMITH, L.V., SMITH, R.P., (2009), Identification of New Keynesian Phillips Curves from a global perspective, *Journal of Money, Credit and Banking*, vol. 41, n. 7, pp 1481-1502.
- DEGER, S., SMITH, R.P., (1983), Military expenditure and growth in Less Developed Countries, *Journal of Conflict Resolution*, vol. 27, n. 2, pp. 335-353.
- DUNNE, J.P., SMITH, R.P., (1984), The economic consequences of reduced UK military expenditure, *Cambridge Journal of Economics*, vol. 8, n. 3, pp. 297-310.
- DUNNE, J.P., NIKOLAIDOU, E., SMITH, R.P.,(2005a), Is there an arms race between Greece and Turkey?, *Peace Economics, Peace Science and Public Policy*, vol. 11, n. 2, pp. 1-35.
- DUNNE, J.P., SMITH, R.P., WILLENBOCKEL, D., (2005b), Models of military expenditure and growth: a critical review, *Defence and Peace Economics*, vol. 16, n. 6, pp. 449-461.
- DUNNE, J.P., GARCIA-ALONSO, M.C., LEVINE, P., SMITH, R.P., STREET, M., (2006), Managing asymmetric conflict, *Oxford Economic Papers*, vol. 58, n.2, pp. 183-208.
- DUNNE, P., SMITH, R.P., (1990), Military expenditure and unemployment in the OECD, *Defence and Peace Economics*, vol. 1, n.1, pp. 57-73.
- FONTANEL, J., SMITH, R.P., (1985), *L'effort économique de défense: exemples de la France et du Royaume-Uni*, Soc. pour le Développement des Etudes de Defense et de Sécurité Internat, Grenoble.
- GARCIA-ALONSO, M.C., LEVINE, P., DUNNE, P., SMITH, R.P., (2007), Determining the defence industrial base, *Defence and Peace Economics*, vol. 18, n. 3, pp. 199-221.

- GLEDITSCH, N.P., BJERKHOLT, O., CAPPELEN, A., SMITH, R.P., DUNNE, J.P., (1996), *The peace dividend*, North-Holland.
- LEVINE, P., SMITH, R.P., (1995), The arms trade and arms control, *The Economic Journal*, vol. 105, n.429, pp. 471-484.
- HARZING, A.W., (2007) Publish or Perish, Available, from <http://www.harzing.com/pop.htm>
- LEVINE, P., SMITH, R.P., (1997), The arms trade and the stability of regional arms races, *Journal of Economic Dynamics and Control*, vol. 21, n. 2, pp. 631-654.
- LEVINE, P., SMITH, R.P., (1997), Arms export control and proliferation, *Journal of Conflict Resolution*, vol. 44, n. 6, pp 885-895.
- LEVINE, P., SMITH, R.P., (2003), *Arms trade, security and conflict*, Routledge, Oxford
- LEVINE, P., SMITH, R.P., REICHLIN, L., REY, P., (1997), The arms trade, *Economic Policy*, vol. 12, n. 25, pp. 335-370.
- PESARAN, M.H., SMITH, R.P., (1995), Estimating long-run relationships from dynamic heterogeneous panels, *Journal of Econometrics*, vol. 68, n.1, pp. 79-113.
- PESARAN, M.H., SHIN, Y., SMITH, R.P., (1999), Pooled Mean Group Estimation of Dynamic Heterogeneous Panels, *Journal of the American Statistical Association*, vol. 94, n.446, pp. 621-622.
- SMITH, R.P., SZYMANSKI, S. (1997), The English Football Industry: profit, performance and industrial structure, *International Review of Applied Economics*, vol. 11, n.1, pp. 135-153
- SMITH, D., SMITH, R.P., (1983), *The economics of militarism*, Pluto Press, London
- SMITH, R.P., (1977), Military expenditure and capitalism, *Cambridge Journal of Economics*, vol. 1, n. 1, pp. 61-76.
- SMITH, R.P., (1980a), The demand for military expenditure, *Economic Journal*, vol. 9, n. 360, pp. 811-20.
- SMITH, R.P., (1980b), *Military expenditure and investment in OECD countries, 1954-1973*, *Journal of Comparative Economics*, vol. 4, n.1, pp. 19-32.
- SMITH, R.P., (1987), The demand for military expenditure: a correction, *Economic Journal*, vol. 97, n.388, pp. 989-90
- SMITH, R.P., (1989), Models of military expenditure, *Journal of Applied Econometrics*, vol. 4, n.4, pp. 345- 359.
- SMITH, R.P., (1998), Quantitative methods in peace research, *Journal of Peace Research*, vol. 35, n.4, pp. 419-427.
- SMITH, R.P., (2000), *Military expenditure and globalization*, in Jan Toporowski, (ed), *The political economy and the new capitalism*, pp. 76-86, Routledge, Oxford.
- SMITH, R.P., (2001), The international arms industry since the end of the Cold War, *World Economics*, vol. 2, n.3, pp. 155-166.

- SMITH, R.P., (2009), *Military Economics: The Interaction of Power and Money*, Palgrave Macmillan, Houndmills.
- SMITH, R.P., HUMM, A., AND FONTANEL, J., (1985), The economics of exporting arms. *Journal of Peace Research*, vol. 22, n.3, pp. 239-247.
- SMITH, R.P., SOLA, M., SPAGNOLO, F., (2000), The Prisoner's Dilemma and Regime-Switching in the Greek-Turkish Arms Race, *Journal of Peace Research*, vol. 37, n. 6, pp. 737-750.
- SMITH, R.P., TASIRAN, A., (2005), The demand for arms imports, *Journal of Peace Research*, vol. 42, n. 2, pp. 167-181.
- SMITH, R.P., TASIRAN, A., (2010), Random coefficients models of arms imports, *Economic Modelling*, vol. 27, n. 6, pp. 1522-1528.