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EXAMPLES FROM ACROSS THE UK



Research has helped to prevent cargo ships sinking.

STATISTICS KEEP SHIPS AFLOAT Lancaster University | Mathematical sciences

The MV *Derbyshire* is the largest UK-registered merchant ship ever to have been lost at sea. In September 1980, she was off the coast of Japan when she encountered typhoon Orchid. All 44 people on board were lost. Over the next two decades, a series of reports tried to ascertain the reasons for the disaster. Key to the investigations were statistical analyses carried out by researchers, including mathematician Jonathan Tawn of Lancaster University.

Cargo ships such as the *Derbyshire* have several large hatches that lead to stores of bulk goods such as grain or coal. The team was asked

to model the effect of waves crashing on the deck in different scenarios to find out if the hatch covers could have been breached.

Not only did their work highlight what went wrong with the *Derbyshire*, it led to a review of hatch covers for all bulk carriers. The team's research fed directly into new international design standards to provide a 35% increase in hatch strength. "As statisticians we get involved in a whole range of problems that aren't mathematics," says Tawn. "That's really exciting."

Hundreds of lives have probably been saved since these regulations were introduced in 2004. More than 7,000 bulk carriers have been strengthened or built with stronger hatch covers; none have sunk.

EUGENE SERGEEV/ALAMY

SIGNS OF CHANGE Heriot-Watt University | Modern languages and linguistics

Most languages originated hundreds or even thousands of years ago, and sign languages are no different. "As long as there have been deaf communities there have been sign languages," says linguist Graham Turner. But they do not always get the recognition and support that they deserve. Turner leads a team investigating how best to provide for sign-language users in society.

British Sign Language (BSL) was not acknowledged as an independent language by the British government until 2003. Even so, this recognition does not give BSL the same level of protection or rights that other oral languages enjoy. Scotland, however, is considering going further, and in October 2014 introduced a bill to recognize BSL, supported by research led by Turner. If passed, the bill would produce a British Sign Language

"As long as there have been deaf communities there have been sign languages."

National Plan for Scotland.

In addition, research at Heriot-Watt University has helped to prompt new government policy to maintain a pool of BSL interpreters, affecting countless interactions between deaf and hearing people. The research has also been used as the basis of a school-level (GCSE) qualification in BSL, which will boost signing skills nationwide. Internationally, this research informs the work of the World Federation of the Deaf, and has fed into efforts to use remote interpreting using videophone, contributing to the success of companies such as the London-based SignVideo.



The play *Vanessa and Virginia* has toured Europe.

WOOLF AND THE ISLAND PRESS University of St Andrews | English literature

On the northernmost tip of the Isle of Lewis in Scotland's Outer Hebrides is the town of Ness. Among its few businesses is Two Ravens Press, a small publishing house whose continued existence can be traced in part to Susan Sellers, a professor of English at the University of St Andrews.

In 2008, Two Ravens Press published Sellers' novel *Vanessa and Virginia*, a work of historical fiction that tells the story of the relationship between Virginia Woolf and her sister Vanessa Bell. It became Two Ravens Press's most commercially successful publication and ensured its economic viability.

Sellers's novel has also contributed to a greater public interest in Woolf, and the author has talked about her story and its inspiration at literary festivals and on radio broadcasts. The book has now been translated into more than 16 languages, featured on US bookshop Barnes & Noble's Discover Great New Writing list, named as an editor's choice by *The New York Times* and recorded as an audiobook. In addition, *Vanessa and Virginia* inspired a play that has graced stages in the UK, France, Germany and Poland. "It was completely magical, I was so fascinated to see another art form begin," Sellers says about watching rehearsals.

Research by Sellers has helped to export Britain's cultural heritage — and has had economic benefits as well.

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