

RSM Insight

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ROTTERDAM SCHOOL OF MANAGEMENT, ERASMUS UNIVERSITY

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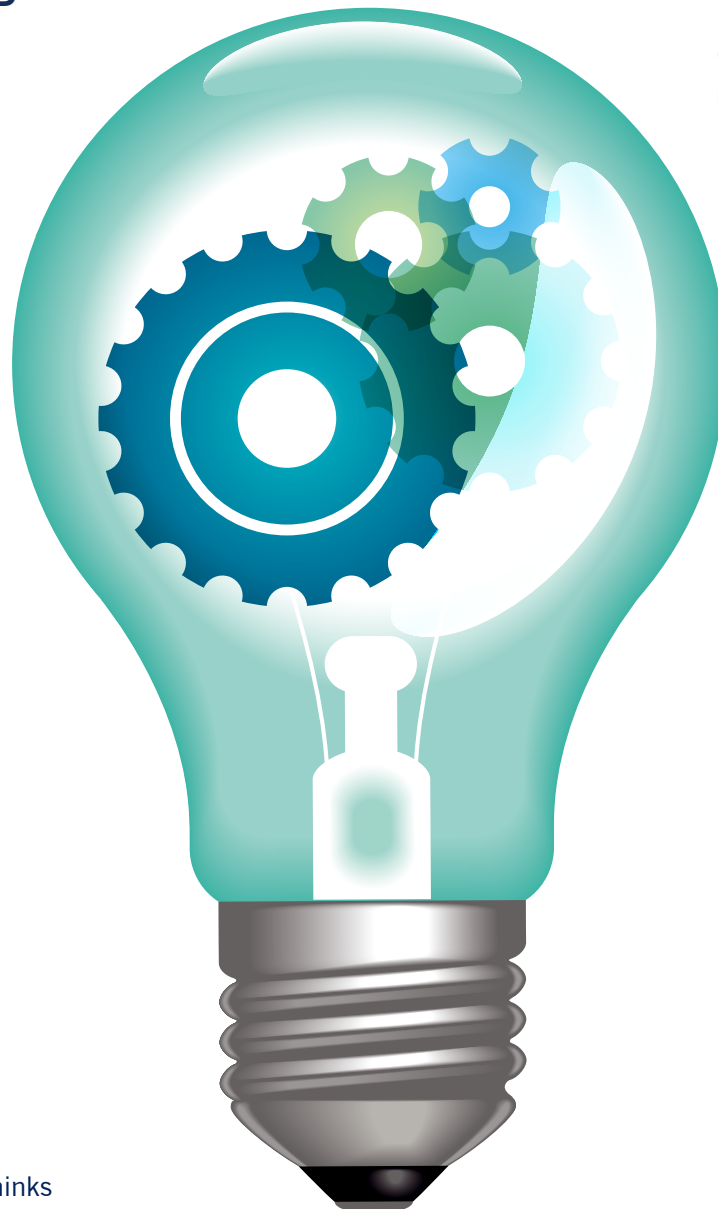
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The business school that thinks
and lives in the future

Paving the way in neuroeconomics

Rebecca Morris interviews Ale Smidts

Why the Erasmus Centre for Neuroeconomics is making a name for itself in research that applies brain-scanning technology to economics and marketing issues.

tools from neuroscience and applying them to questions of a business or economic nature.

The field is gaining the endorsement of some of the world's leading academic institutions – among them the Erasmus Centre for Neuroeconomics. And companies are following suit. Because while its research methods are novel, perhaps most intriguing about this field is its potential to produce revelatory new knowledge that is of interest to both scientists and practitioners.

Brain-scanning technologies – advanced versions of the electroencephalograph (EEG) and the more expensive functional magnetic resonance imaging machine (fMRI) – can offer economists rich new data streams. Of considerable applied interest is its potential *predictive* power regarding how markets will respond to market offerings and advertising.

'It's an exciting area of new research that is both challenging and inspiring,' says Ale Smidts, a professor of marketing research at RSM and chair of the school's marketing management department 'One of the reasons neuroscience techniques are so useful in an economic context is that much of our decision-making as consumers goes on at a sub-conscious level. With neuroimaging techniques we can now directly observe and measure these implicit or unconscious processes ▶

A recent neuromarketing world forum held in New York enticed business leaders and academics from around the world to 'Rethink Advertising' and learn the secrets behind the 'Success of iconic brands'.

On the agenda of the event, at which RSM's Professor Ale Smidts was a keynote speaker, were the latest studies to emerge from a small but elite group of business schools demonstrating ways in which brain-imaging technology can advance

our understanding of – and ability to predict – consumer behaviour. Among the research presented were case studies with consumer giants Estee Lauder and Fox Sports.

Neuroeconomics – and its more applied offspring "neuromarketing" – is currently one of the fastest growing and revolutionary areas in management and economic research. It unabashedly crosses the boundaries of academic disciplines, borrowing insights and high-tech medical

Paving the way in neuroeconomics (continued)

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– information that is not accessible through conventional methodology such as self-reporting.’

Which is why neuroeconomics holds such allure for marketers – where conventional market research methods fall short, perhaps neuromarketing techniques can succeed, helping companies to tweak their products and adverts to more precisely reflect consumers' desires.

The value of neuroeconomics

One of the research lines at the Erasmus Centre for Neuroeconomics compares the predictive power of data from neural-focus groups with those of conventional market research methods. Neural-focus groups use brain-imaging technology to examine the brain responses of 30 to 40 consumers to marketing stimuli.

One such study monitored individuals' brain responses to different adverts promoting the same product, a muscle soothing gel.

Twelve different advert executions were tested, each 30 seconds long and including the same branding and product but utilising different selling techniques. To measure the effect of the advert at the market level, twelve groups of consumers were selected, each exposed to one advert with the option to click through and “buy”

the product, as well as give a verbal evaluation of their advert preference. Brain activity was then compared with the self-reporting evaluations and the choice behaviour.

What emerged reveals something about why both scientists and practitioners are excited about neuroeconomics. The brain responses proved to be more accurate predictions of the choice behaviour than the self-reports.

Another study in the process of completion, thus far reveals similar findings. Individuals were asked to watch movie trailers while their brain activity was monitored using an EEG scanner. They were also asked to verbally rate the movie.

Self-ratings of the trailers were not predictive of the US box office results, ie, they did *not* reflect the success or failure of the movie in the marketplace. The brain responses, on the other hand – did.

‘The findings are very promising for a scenario in which brain response data is used to enhance self-report measures,’ says Smidts.

At RSM, research into neuroeconomics began ten years ago with the advent of brain-imaging technology – fMRI – and refinements in brain-wave technology (primarily EEG).

At the time, very little research on choice behaviour had been conducted using these techniques. Professor Ale Smidts – then the director of the Erasmus Research Institute of Management – collaborated with neuroimaging specialists from the Donders Institute for Brain, Cognition and Behaviour at Radboud University in Nijmegen, to conduct the first project

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Prof. Ale Smidts, Director, Erasmus Centre for Neuroeconomics.

of its kind on brain mechanisms of persuasion, later published in *Social Cognitive and Affective Neuroscience (SCAN)*.

Other research followed which examined the neural processes

underlying the influence of an individual's peer group, later published in the top neuroscience journals *Neuron* and the *Journal of Neuroscience*, and becoming a highly influential paper in the scientific world.

Six researchers including assistant professor Maarten Boksem, an expert in EEG and fMRI, now conduct research into neuromarketing at RSM – making it one of the largest groups working in the field in Europe. Most have backgrounds in neuroscience, biology or psychology.

The research strives to improve our understanding of consumer decision-making, while demonstrating how biological measures can add value to existing marketing research methodology. Also among its goals is to test how viable these methods are as a means of predicting market responses and, most importantly, how brain responses can help in the development phase of products or adverts.

And herein lies a critical point, says Smidts. Neuroeconomics is a seminal area of research and these tools and techniques are still being refined and evaluated. Which calls into question the reliability of the data currently being produced by neuromarketing consultancy firms. How meaningful are their predictions?

Commercialising the technology

The lack of transparency around neuromarketers' interpretation of data is of concern to Smidts. Few can verify their claims, and there is no regulation of the industry. Which is why he called for "evidence-based neuromarketing" at the world forum conference two years ago.

'It's really important for the industry to develop norms and quality guidelines so that these consultancy firms do not over promise, and so that buyers of their services can trust that the analyses are correct,' he says.

Currently working on establishing these guidelines is the Neuromarketing Science & Business Association (NMSBA), established three years ago in Amsterdam, and organiser of the annual Neuromarketing World Forum.

As for RSM, business is increasingly interested in the results of its research. RSM is collaborating with industry on several neuromarketing projects, while there is increasing demand for experts – such as Smidts – to present at industry events. And while the focus remains on research, Smidts has not ruled out collaborating with a consultancy firm to offer a quality service to companies.

In the meantime, neuroimaging scanners and the software for analysing data continue to advance



and proffer ever more possibilities. The field is sure to remain a fertile area of academic research, but what the business future holds is more difficult to predict.

'It's still an open question how far companies will go in wanting to use this technology,' says Smidts. 'Companies are definitely interested in reducing their risk when it comes to introducing a new product or advertising campaign in the international market, where there are so many uncertainties. Neural-focus groups could well be a welcome and cost-effective additional method of getting crucial insights.'

More information about the centre, its goals and research themes can be found at www.erim.eur.nl/neuroeconomics