

World-first research to explain why actions speak louder than words

August 9 2013



An innovative series of experiments could help to unlock the mysteries of how the brain makes sense of the hustle and bustle of human activity we see around us every day.

Very little is known about the [psychological processes](#) which enable us to pick out a potential mugger from a busy street or to spot an old friend approaching us across a crowded room. Such [judgements](#) of social intention, which we make countless times each day, enable us to respond in appropriate ways to the dynamic and complex world around us.

George Mather, Professor of Vision Science at the University of Lincoln, UK, and one of the world's foremost experts on human visual perception, will lead a new research project investigating the mechanisms behind this crucial ability to perceive and interpret the intentions of other people from the way they move.

Numerous experiments have explored the way we use [visual signals](#) to extract meaning from our environment, but most have been based on static images, such as photos of different [facial expressions](#). Other studies into the perception of moving images have relied on very simple animated scenes, like moving patterns of regularly-spaced lines or random dots, devoid of the richness and nuances of scenes from the 'real world'.

There remains limited scientific understanding of how the human [visual system](#) makes sense of the flurry of movement we see around us in modern societies: for example, whether a person approaching us is sprinting or strolling, whether that means they are angry or calm, and how we should react in response.

Professor Mather aims to bridge this gap in the academic literature through a series of world-first experiments. He has been awarded a grant of £287,000 by the UK's Economic & Social Research Council (ESRC) for a three-year study. The aim is to shed new light on the process by which the human visual system identifies and decodes 'dynamic cues of social intention'.

Professor Mather said: "It's true that actions speak louder than words. Perception of movement is fundamental to many of our everyday social interactions. But simply judging speed is in itself a very complex task. When you see somebody walking across your field of view, how do you know how fast they are going? That information can be very useful because it might tell you something about their intentions but it's

surprisingly difficult to make an accurate judgement. A basic problem is that the further away a moving object is, the slower it moves in the image received by the eye. We don't really understand at the moment how the human visual system is able to compensate for different viewing conditions."

Motion perception has been a consistent theme of Professor Mather's research career. In previous studies he has shown that the brain can deduce socially meaningful information from very simple depictions of human movement, such as collections of dots denoting the major joints of the body.

The research in this latest project will answer fundamental questions about how the brain combines 'low-level' information about image motion with 'high level' knowledge of the social world to make meaningful assessments of the speed and nature of human movements.

Provided by University of Lincoln

Citation: World-first research to explain why actions speak louder than words (2013, August 9) retrieved 26 April 2024 from

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