UNIVERSITY COLLEGE LONDON

Department of Statistical Science
and
Jill Dando Institute of Crime Science

1-DAY MEETING ON EVIDENCE

Friday 21 February 2003
The Council Room

(South Corridor, Wilkins Building)

10:00 Introduction

10:15 Philip DAWID (Statistical Science)

Statistical and Legal Evidence

In cases at law, the relation between the evidence presented and the conclusions sought is typically uncertain. In some cases the evidence itself is statistical or probabilistic in nature. However, even where the relevance of uncertainty is appreciated, commonsense interpretations of such evidence often exhibit serious errors and misunderstandings. Careful logical application of simple concepts of probability theory offers valuable and often surprising insights. I shall illustrate this using as examples the interpretation of identification evidence (such as DNA profiling), and the case of Sally Clark.

11:00 Coffee

11:15 Stephen SENN (Statistical Science)

Competence and Equivalence

Many controversies over risk in the public domain, BSE and MMR vaccine are two examples, boil down to attempting to prove that something can't happen or does not exist. This appears to be a logical impossibility: a game of hunt the thimble in which failure to find the thimble is taken as proof of its non-existence.

In this talk I shall discuss how the technical matter of attempting to prove nothing is happening is handled in the context of drug development, in particular in trying to show that a generic formulation is the same as an innovator drug. I shall also consider some limitations of this approach and some problems in extending the concept beyond drug development.

Using a Bayesian framework that allows for the "competence" of evidential search strategies it can been shown that under certain circumstances failure to find evidence of a problem results in two outcomes: first, conditional on an assumption that the search strategy is competent to find the problem, an increased probability that the problem does not exist; second an increased unconditional probability that the search strategy is not competent. The adage, "absence of evidence is not evidence of absence," has some truth.

12:00 Richard LEARY (Jill Dando Insititute)

Evidence Management and Intelligence Analysis

Evidence is usually described on the basis of what it, is rather than the knowledge it can impart: thus legal practitioners may distinguish between "DNA evidence", "fingerprint evidence" and "eye witness testimony". When evidence is seen in the light of uncertainty, however, the difficulties in this typological approach become clear: for only when evidence is compared, contrasted or juxtaposed with other evidence can knowledge be drawn from it.

Different people use evidence in different ways. Lawyers preparing for trial consider whether it tends to support or negate legal rules; intelligence analysts consider whether it can support or negate a hypothesis, or generate new hypotheses. This presentation will examine traditional descriptions and uses of evidence, and suggest new ways in which it can be seen, described and used. Differences between the operational use of evidence by investigators and intelligence analysts pre-trial (before a charge is laid), and its operational use by lawyers preparing for trial (post charge), will be described and illustrated.

12:45 Lunch

1:45 Nigel HARVEY (Psychology)

Effects of Prior Information and Opinions when Considering Evidence

Experimental studies indicate that people making judgments tend to stick too closely to their initial views or are too influenced by prior information. These effects are present when people use their judgment to make forecasts from data, when they make judgments on the basis of legal evidence, when they make estimates of quantities (eg costs of products), and in many other situations. Explanations for the effects tend to be either in terms of conservatism (people are reluctant to change their minds) or in terms of use of an inappropriate judgment heuristic. I shall discuss whether these should be considered distinct accounts.

2:30 Bob SHARPLES (Greek and Latin)

Reconstructing Ancient Greek Philosophy: a Corrosive Attitude to the Evidence?

Our knowledge of a great part of ancient Greek philosophy is dependent on second-, third- or more- hand ancient evidence (or "data"). Problems in using this, to be illustrated by a few samples, include the tendentiousness of ancient sources, whether because they themselves hold a philosophical position actively hostile to the one on which they are reporting, or simply because they start from different presuppositions; and the methodological problems in using the precise wording of reports as evidence for drawing distinctions which the reporter may not have had in mind, whether or not the subject of the report did so. I will conclude with a general reflection on possible implications here for other situations where data is used as evidence in contexts other than its original one.

3:00 Jason DAVIES (History of Medicine)

Making Evidence out of Data in the Ancient World: Proving the Rôle of the Gods Beyond Doubt.

The ancient world saw the actions of the gods in 'real' life. I will discuss briefly the way that phenomena could convincingly be understood as instigated by the gods by ancient thinkers, despite the appearance of supposedly sceptical comments. The evidence presented will be from critical historiographical and medical accounts and symptomatic rather than exhaustive or general.

3:30 Tea

3:45 Trisha GREENHALGH (Primary Care)

Is Evidence-Based Medicine Dead?

From the late 1980s through to the early 1990s, the "Evidence-Based Medicine" (EBM) movement gained prominence in both academic and clinical circles. The so-called "philosophy" of the EBM movement was that a strictly empirical approach, based largely on randomised controlled clinical trials of interventions, could — and, crucially, SHOULD — provide all the information that doctors needed for clinical decision making. A perfect clinical decision was one that was made on the basis of a thorough assessment of all the relevant research literature (where "research" was judged in a strict hierarchy with randomised controlled trials at the top and expert opinion at the bottom). EBM in its pure form was thus seen as antithetical to intuitive judgment, expertise or experience. Later developments in EBM allow that clinical experience and intuition, and the patient's idiosyncratic preferences, CAN play important roles alongside evidence from trials. But many unanswered questions remain — such as how is "good judgment" to be assessed and how are different kinds of evidence to be combined? And how will this shift affect the doctor and the patient? Given the high political status accorded to EBM in the UK, a study is well overdue to address some fundamental epistemological issues, such as

- the relationship of 'pure' science to clinical practice
- the evidential role of clinical experience or clinical 'intuition'
- the 'objectivity' or otherwise of clinical trials
- the applicability of scientific experimental methods
- methods for weighing and combining evidence
- the evidential role of the patient's story-telling

4:30 Simone STUMPF (Computer Science)

Evidence and Argumentation Frameworks

This talk introduces major frameworks of argumentation theory and discusses the role of evidence within them. It will be shown that, depending on which argumentation framework is assumed, the nature and uses of evidence change. Hence, a clear understanding is needed of the context in which evidence is to be placed as it has important effects on reasoning with and (re)presentation of evidence.

5:15 General discussion