**Statistical concepts**

In the two (imaginary) experiments summarized below, identify the independent variable, dependent variable, experimental group and control group (if they exist).

1. A group of ex-offenders with alcohol problems attend a morning of talks on strategies for controlled drinking. 12 weeks after attending the session, they complete a questionnaire about their social functioning, which is compared with previous measurements. In this experiment, what are the dependent and independent variables?

The independent variable in this study is the educational session provided. The dependent or response variable is social functioning, as measured by the questionnaire.

If you are going to create a control and experimental group as part of the procedure in this experiment to better assess the effects of the stimulus, how would you implement it?

As well as the group of ex-offenders who have attended the educational session, another, similar, group does not attend the educational session. They also have their social functioning re-measured. The ex-offenders who attended the session are the experimental group; those who did not attend are the control group. The outcomes can be compared to see if they are significantly different.

1. The police are trying to work out how to create an effective video to encourage members of the public to become volunteer community officers. Before watching the video, each participant is asked to complete a short scale, on the likelihood of their applying for the position. The video is short, to try to ensure full attention. Three different versions are shown to different people: although all relevant facts are covered, one version emphasizes the benefits to the community; another discusses the benefits of joining the service (job satisfaction, camaraderie, etc.); the third has a focus on the experiences of current volunteers. A fourth group watches a video offering a carefully balanced coverage of all three of these factors. After the video, participants are asked to fill in the scale again. Which are the independent and dependent variables?

The independent variable is the focus of the video's content. The dependent variable is the level of interest in applying for the position, as measured by the scales.

Which groups are the control and experimental group?

All three of groups observing the 'slanted' video recordings are experimental groups. Those watching the 'balanced' video comprise the control group.

**Data types**

For each variable, identify the data type: continuous, ordinal or categorical).

Sex / Marital status / Level of education / Age group / Convictions ('form') / Length of service / Serious prison sentence duration

* Sex - categorical
* Marital status – categorical
* Level of education - ordinal
* Age group - ordinal (for analytical purposes, you would normally convert to integers, e.g. 0 - 9 years becomes 1, 10 – 19 years becomes 2, and so on)
* Convictions ('form') - ordinal
* Length of service - continuous
* Serious prison sentence duration - continuous