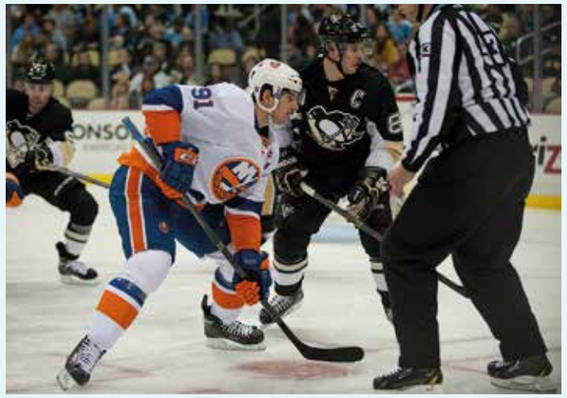
Research methods in psychology and sport

Research methods are important in psychology for the simple reason that not all people are the same, and so we need tools that allow us to study and understand our differences.

Did you know?

Research methods is worth about 25% of all AS and A2 qualifications. This means you should spend ¼ of your revision time on research methods.



Experimental method

One of the central concepts of the experimental method is that of cause and effect — a change in one variable creates a change in another variable. For example, in an ice hockey shoot-out, if you played for the New York Islanders would you be more or less likely to score a goal than if you played for the Pittsburgh Penguins?

In the experimental method, the **independent variable** (IV) is expected to be the cause and the **dependent variable** (DV) is the effect.

Ice hockey experiment

The New York Islanders and Pittsburgh Penguins ice hockey teams could be involved in a penalty shoot-out in the Stanley Cup. This would be a **natural experiment** because the independent variable (member of an ice hockey team) was not determined by the researcher. However, if the team membership had been determined by the researchers then it might be classed as a **field experiment**. We could measure how good each team is at taking shoot-outs by simply counting the number of goals scored.

In our example:

- IV (the cause) = club team (New York Islanders or Pittsburgh Penguins)
- DV (the effect) = effectiveness at shoot-outs (as measured by whether you score a goal or not)

Self-report method

Using this method we can ask people about behaviours so that they can report their answers themselves. This can be through interviews or questionnaires. For example, we could ask A-level students the same questions in the same order about their opinion of the England women's rugby team. This would be a **structured interview**.

If the interviewer changed the questions as they went along, depending on the answers they got, this would be an **unstructured interview**. A **semi-structured interview** would have some set questions about the England women's rugby team but would also allow other questions to develop as the interview develops, questioning people's opinions in more depth. Questionnaires are usually completed by participants themselves.

Rugby self-report

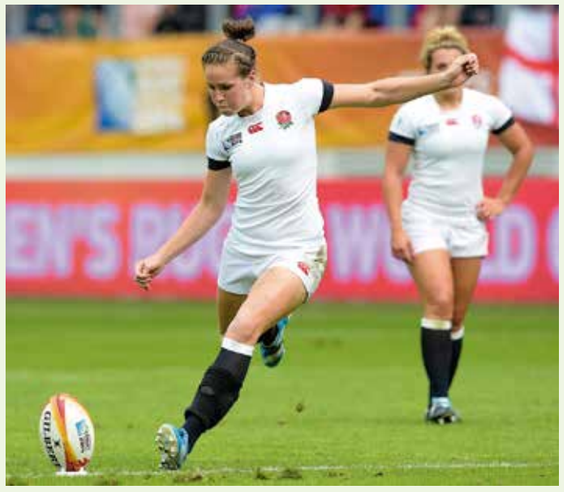
Self-report is interesting as we can use it to ask *why* questions. For example 'Why do you think Emily Scarratt is an excellent player at centre?' or 'Why is Emily Scott such a good fly half?' These are examples of **open questions** that allow a free response providing **qualitative data**.

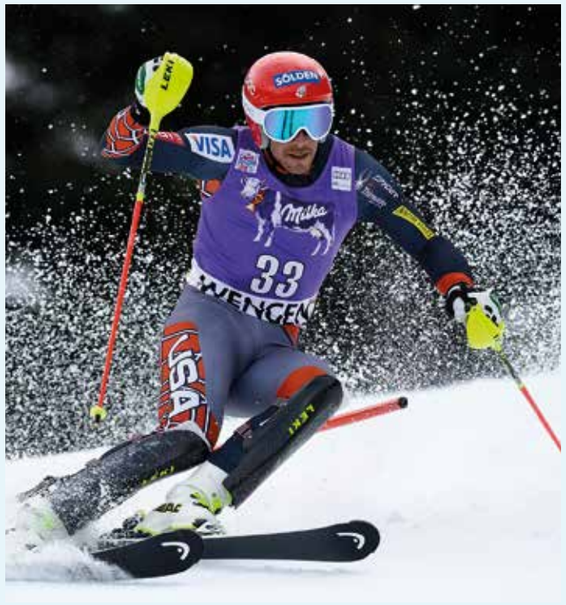
Closed questions can be used to generate **quantitative data** that allow us to statistically analyse answers more easily. For example, this is a 5-point rating scale:

To what extent do you think the French women's rugby team will retain the RBS Six Nations?

1 2 3 4 5

Not at all ↔ a lot





Correlation

Strictly speaking, this is a statistical technique rather than a method as it looks at the relationship between two variables. There are essentially two types of correlation: either a **positive correlation** where as one variable increases so does the other variable, or a **negative correlation** where as one variable increases the other variable decreases. Importantly, we must use quantitative data and understand that correlations do not infer cause and effect between the two variables.

Skiing correlation

If we wanted to find out if there was a relationship between skiers' anxiety levels and their downhill times, we could ask the USA ski team to complete the Competitive State Anxiety Inventory (CSAI) to measure of their **state anxiety** and also measure their times in the Wengen downhill race. The two measures can then be correlated to see if there is a relationship.

Such data alone would not, however, mean that low or high anxiety levels will cause fast or slow times — though researchers can use correlational methods to tease out this relationship. For example, if anxiety measured before the event was positively correlated with later performance, but performance was not positively correlated with anxiety measured after the event, then we could conclude the anxiety caused the improved performance. This is called **cross-lagging**, where one co-variable is measured twice and correlated twice with the second co-variable.

Observational method

Data may be collected by watching participants. This can be done by sitting and recording behaviour in front of you, or by observing through one-way mirrors or indeed by capturing behaviour electronically through the use of cameras etc. **Controlled observations** take place under laboratory conditions, whereas a **naturalistic observation** takes place in a real-life situation. A special type of natural observation is **participant observation** where the researcher becomes a member of the group they are watching.

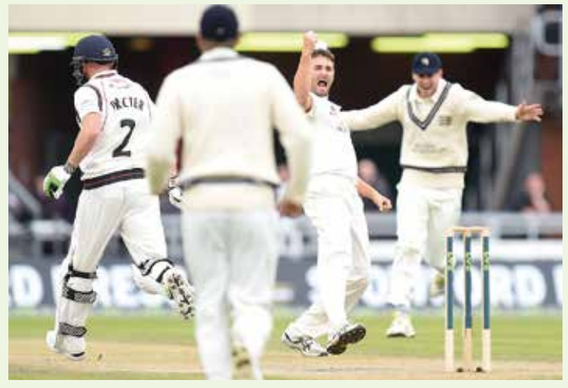
Each of these methods can be carried out in a structured or unstructured way. **Structured observations** have pre-determined categories, whereas in **unstructured observations** the observer simply records everything seen or heard.

Data are sampled (in both structured and unstructured observations) either by counting every time an event occurs (**event sampling**) or by recording what is happening at a pre-specified time interval such as every 5 seconds or 2 minutes (**time sampling**).

Cricket observation

We could carry out a structured, naturalistic observation by watching Middlesex's first game of the season against Durham and count the number of runs conceded by each bowler. From this we could see which team had the most accurate bowlers.

Similarly we could investigate which team was best at getting run-outs by counting the number of times they throw down the stumps in practice; this would be a structured, controlled observation (stumps hit, not hit). It would, of course, be far more difficult to carry out a participant observation unless you happen to be a member of the Middlesex cricket team!



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