Table 4.2

Example of a Typical Title Page ✓

The Effect of Group Discussion on the Polarisation of
Attitudes in Group and Individual Decision-Making

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Tutor: Danielle Williamson
Class: Wednesday, 10:30–12:30

You will find it advantageous to write this section last. By then you will have written about what it was you were testing (Introduction), how you did it and to whom (Method), what you found (Results), and what you concluded (Discussion). The Abstract is a précis or summary of these aspects of your report. For an undergraduate report, the Abstract should be on a separate page. The heading should be the word **Abstract**, in bold upper case (capital) and lower case (small) letters centred across the page. The Abstract itself should be a single paragraph of double-spaced typing, flush left, with the first line not indented. The latest APA *Publication Manual* is less strict about length than previous editions were, but my strong recommendation is that it should not be much more than 150 words. Once again, check the expectations of the staff member setting your assignment. The APA expects the Abstract to be at the top of the page for a submitted manuscript.

It is customary to begin with a sentence stating the aim of the study. This is followed by the number and type of participants. Only include information sufficient to inform the reader about those characteristics of the participants that are relevant to the conclusions drawn, and mention whether they were university students or a community sample. Age or gender need only be mentioned if they affect either the research question or the representativeness of the sample. These opening statements are followed by a very brief overview of what was actually done; that is, the experimental method. In the interests of brevity it is then best to state that "the hypotheses that . . . [whatever your hypotheses were] were [or were not] supported". Journal articles rarely mention the word "hypothesis". Your tutor or lecturer may expect you to do so to ensure that you are clear about what was predicted and

whether it was supported. Some of the examples given in Table 4.3 show the alternative of simply stating what results were obtained. A final sentence can then be written stating the conclusions that you drew from these results.

Table 4.3

Examples of Abstracts

This study explored the relationship between Type A behaviour, stress, and task difficulty. Participants were 30 undergraduates selected from a larger study at a metropolitan university, whose stress levels were measured before and after a pattern-matching task which was either unpressured or deliberately designed to provoke Type A behaviours by providing an environment that was achievement-oriented, time-pressured, and self-esteem threatening. Self-reported Type A behaviours were also measured. The hypothesis that people higher in Type A behaviour are more stressed during a more pressured task was supported, though they were not more stressed in general. It was concluded that measurement of Type A behaviour needs to focus on all aspects of this behaviour pattern not just the time-urgency.

This study examined "hoped for" selves across the age range, and their relationships with current well-being. Two hundred and ninety four introductory psychology students and their acquaintances responded to a survey about hoped for, and feared selves, and psychological well-being. Occupational hoped-for selves were most frequently reported, possibly reflecting the predominantly young sample and the current economic conditions. The area of family was also considered important. Contrary to previous findings, capability of achieving hoped-for selves did not differ across age groups, nor did type of hoped-for self differ depending on current well-being. It was concluded that, although the study needs to be replicated with a sample of more diverse age, most people report being capable of achieving hoped-for selves.

The aim of this study was to test whether there was a bias towards drawing left-facing profiles, and if so, whether this is affected by handedness. Under counterbalanced conditions, 431 undergraduate students were requested to draw a person's head in profile, to report, from memory, which way the Queen's head faced on a 20-cent coin, and to draw the head side of a 20-cent coin from memory. Results indicate that a substantial majority of people drew a left-facing profile, regardless of handedness. When asked which way the Queen's head faced on a coin, they answered at no better than chance levels. It was concluded that a left-facing drawing bias exists which is unrelated to visualisation or handedness.

The purpose of this study was to test the hypothesis of an inverted-U relationship between stress and arousal and performance on judgment of perceptual accuracy. The sample consisted of 211 female and 89 male undergraduate university students who judged the accuracy of repeated presentations of the horizontal–vertical illusion, and reported their level of stress and arousal using a popular checklist. Results indicate that, contrary to expectations, there was no relationship between arousal and perceptual accuracy. It was concluded that perceptual accuracy did not appear to be related to stress or arousal for this rather simple type of judgment, but that further studies should examine the effect of differing levels of task complexity.

You will find it useful to look at some of the major journals for examples of Abstracts. Try *Journal of Personality and Social Psychology*, *Child Development* and *Sex Roles* for areas that you may encounter in your very early studies. Later you may want to look at journals such as *Journal of Experimental Psychology* for Abstracts of studies in the areas of cognition and perception.

4.2   Introduction

By the time you sit down to write the Introduction, you should have read enough previous research to have decided on your hypotheses, tested them with the appropriate statistics, and decided what the results told you. You need to write the Introduction as if you were the researcher who designed the study. You know what the report is about, and the Introduction should lead the reader along the path you took to decide why you tested the particular hypotheses you did test.

You should begin the Introduction on a new page. Do *not* give the heading "Introduction". The location of the Introduction tells the reader what it is. Since a research report is a final presentation, rather than a manuscript for submission, most institutions suggest that the page on which the Introduction begins is also not numbered. Page numbering begins with "2" at the top right-hand corner of the second page of the Introduction. Institutions requiring a report in the form of a journal submission expect you to repeat the title, centred at the top of the page on which the Introduction begins. Ask your tutor or lecturer whether this style is expected.

Opening sentences. The purpose of an Introduction is to explain why you have undertaken your study, and to lead logically to why you expect whatever you hypothesise. It is (surprise!) an exercise in communication, and for that reason should be written in English prose, not psychological jargon. You should *not* leap straight into the middle of your research problem or theory. Instead you should lead the general reader step by step through your reasoning. Kidder and Judd (1986) put it nicely when they suggest that you open with a statement about human behaviour, not the behaviour of behavioural scientists or their research.

Do not allow this general statement to degenerate into cliché. Markers are not impressed by opening statements such as "Ever since humanity came down from the trees, psychologists have been interested in . . ."! However, the behaviour being studied ought to be relevant in some way to the real world. You should be able to make a one- or two-sentence statement of this relevance. Some fairly recent Australasian examples are given in Table 4.4.

Define the area under study. The initial general statement of the area under consideration should be followed by a statement of the theoretical framework that has generated the particular questions you used for your study. You can usually find this in

Table 4.4

Some Actual Examples of Opening Sentences   ✓

Pseudoword (non-word) reading tasks are a commonly used measure of phonological processing across diverse fields of reading research. However, whether pseudoword reading gives any more information about phonological processing in young learner readers than does the reading of real words has seldom been considered. (Thomson, Crewther, & Crewther, 2006, p. 289)

The prevalence of mental disorders in the community is high, with the Australian National Survey of Mental Health and Well-being indicating that around one in five of the adult population have a depressive, anxiety or substance use disorder each year. (Jorm & Kelly, 2007, p. 81)

Most relationships eventually encounter conflict of some nature, where one party perceives that the other has behaved in a hurtful or unjust manner. In some instances, transgressions can lead to strong grievances that interfere with the relationship. (Hodgson & Wertheim, 2007, p. 931)

Group identification is central to a number of important theories of intergroup relations. For example, social identity theory (SIT) sees social and group identification and the motive to establish and maintain positively valenced group identities as fundamental to intergroup behaviour. (Duckitt, Callaghan, & Wagner, 2005, p. 633)

There is a revolution sweeping psychology, one that emphasizes a positive psychology and focuses on how healthy, normal and exceptional individuals can get the most from life (e.g., Seligman & Csikszentmihalyi, 2000; Vallerand et al., 2003). A positive self-concept is valued as a desirable outcome in many disciplines of psychology, such as educational, developmental, sport-exercise, health, social and personality psychology, as well as in a broad array of other social science disciplines. (Marsh & Craven, 2006, p. 133)

Patients' mental health is an integral dimension of palliative care, as defined by the World Health Organization. Depression is a serious mental health problem in palliative care. It is both prevalent and long lasting in this population. (Robinson & Crawford, 2005, p. 278)

Cross-culturally, individualism is characterized by an independent self-construal, emotional independence, and behaviour regulated by the individual's attitudes, whereas collectivism is characterized by an interdependent self-construal, emotional interdependence, and behaviour regulated by in-group norms. (Scott, Ciarrochi, & Deane, 2004, p. 143)

Note: These quotations are examples of opening sentences. They are also in the format of block quotes. Note the full stop at the end of the quote and the source afterwards in parentheses. However, you should avoid such quotes in your assignments. Instead phrase the quote in your own words, with an acknowledgment, to show that you understand the material.

your textbook, and in the early part of the Introductions of the references you have been given. Do not make this part very long, but it is useful to define technical terms. Write it for an intelligent lay reader who is generally familiar with psychology, but not with the specific area you are reporting on. Be careful when defining terms, because many terms used in psychology have technical meanings somewhat different from their everyday use. For this reason, use a dictionary of psychology, not an ordinary dictionary. If you already know that you intend to major in psychology, a dictionary of psychology is a good investment. Most textbooks also have technical terms defined either in the body of the text or in a glossary.

Previous research. Usually the studies that you encounter early in your undergraduate career will be replications or variations of previous research. This part of the Introduction should therefore consist of stating what previous researchers have done, what their theoretical positions are, and what they have concluded from their research. You should have a logical structure to the sequence in which you describe previous research. There are no strict rules for this, but one possibility is to describe the most general findings first, followed by descriptions of the findings in previous research that are specifically relevant to your hypotheses.

Describe all the relevant material from a particular piece of research in the one place. It is frustrating for your marker to read a paragraph about a specific study, then a couple of paragraphs about another one, then find more material about the first one. The reports that gain the best marks are those that follow a logical sequence.

You should be very selective about what you include. There is a temptation to write all you know about a previous study. Resist it! You need only include the material that is relevant to your subsequent hypotheses. Typically that means giving only the briefest overview of what the researcher did, to whom, and what was concluded from it. When reading previous research, you should have applied the principles of critical evaluation already described in Section 2.4. In writing an overview of previous research, you should briefly describe the elements of that research in a way that indicates the quality of the evidence you are using to justify the hypotheses which you will make at the end of the Introduction. Some examples of summaries of previous findings are shown in Table 4.5. They are from recent publications by Australasian psychologists.

How much prior research should be included? Students often ask how much previous research they should include. It largely depends on the length allowed for the report. Check with your own tutor or lecturer, but most first-year research reports are based on one or two specific references. However, you are expected to read beyond these central references. Second-year research reports will often be assigned as many as five references, and you will certainly be expected to *read* at least as many more. A rule of thumb is that you will need to read at least as many more references as you have been given. You should *describe* enough previous research to justify the hypotheses you make, either to

Table 4.5

Some Real Examples of Summaries of Previous Research

Various phenomena have been associated with anger in PTSD. Emphasising anger's enduring nature, some have noted the role of personality-related and cognitive variables. Researchers have explored the contribution of pre-trauma psychological traits to anger in PTSD using proven constructs. For example, Meffert et al. (2008), in a large prospective study of United States police, confirmed the function of pre-role trait anger in the development of PTSD symptoms and anger after 1 year of active police duty. Others have investigated prototypical characteristics associated with anger. US studies of Vietnam veterans (Miller, 2003; Miller et al., 2004) and survivors of sexual assault (Miller & Resick, 2007) show externalising personality style characterised by high negative emotion and low behavioural constraint is associated with anti-sociality and aggression in PTSD sufferers. Forbes, Fletcher, Parslow, Creamer, and McHugh (2010) replicated this externalising finding in PTSD-treated Australian Vietnam veterans, having earlier established that externalising, fear of anger and social alienation predict poorer recovery following treatment (Forbes et al., 2002; Forbes et al., 2003; Forbes et al., 2008). (McHugh et al., 2012)

However, the few studies that have examined aged care staffs' understanding of late-life depression suggest that professional carers lack the skills necessary for detecting signs of depression in their clients (Bagley et al., 2000; Davison et al., 2009; McCabe et al., 2006; Teresi et al., 2001). For example, Bagley et al. (2000) reported a large survey which demonstrated low rates of recognition of depression by aged care and nursing staff (≤ 36%). Similarly, Teresi et al. (2001) found that aged care staff was only able to recognise depression in 32% of residents who were identified as depressed, using diagnostic interview and self-report measures of depression. McCabe et al., 2008a and McCabe et al., 2008b study of GPs' perceptions of aged care staff suggested that the staff required explicit guidance in monitoring depressive symptoms and only seemed to detect the most obvious changes in care recipients' affective states. (Karantzas, Davison, McCabe, Mellor, & Beaton, 2012)

Cross-sectional associations between observed support behavior and relationship well-being suggest that intimates who are more satisfied behave more positively and less negatively during support interactions (e.g., Lawrence et al., 2008; Pasch & Bradbury, 1998). However, only two prior studies have explored these links longitudinally. Comparing the interaction behavior of couples whose relationships were classified as distressed (separated, divorced, or low in satisfaction) versus satisfied two years later, Pasch and Bradbury (1998) found that women in distressed couples offered less positive support and behaved more negatively. Cobb, Davila, and Bradbury (2001) also reported that women who behaved negatively in support-related discussions reported lower satisfaction one year later. (Overall, Fletcher, & Simpson, 2010)

Harris and Menzies (1999) demonstrated that state anxiety was negatively associated with performance on a laboratory prospective memory task, and argued that worry associated with anxiety competed with prospective memory for limited working memory capacity required for successful prospective remembering. Harris and Cumming (2003) extended these findings, showing that performance on an event-based prospective

memory test, but not a matched retrospective memory measure, was associated with state anxiety. This study was important, as it implied a deficit with the prospective component of respective remembering rather than with the retrospective memory component. (Harris & Cranney, 2012)

Gilovich et al. (1993) showed that a group of students overestimated their own performance in an exam when their performance judgements were made in advance, and that the overestimation significantly decreased when the performance judgements were made immediately before the exam. Shepperd et al. (1996) showed that students overestimated their qualifications on a classroom exam a month before taking the exam. However, they were more accurate when they estimated their performance immediately after taking the exam. Interestingly, they underestimated their performance when the estimation took place 3 days after taking the exam and seconds before receiving performance feedback. Shepperd et al. (2005) showed that participant's knowledge of when they would receive feedback about a test affected performance judgements about that test. They asked participants to perform a verbal reasoning analogies test. After taking this test, a group of participants were told that they would receive immediate feedback, and another group of participants were told that they would receive feedback in 3 days. Participants in the immediate-feedback group estimated their performance accurately, and participants in the delayed-feedback group overestimated their performance. Moreover, there was a negative significant correlation between anxiety and overestimation (i.e., the more anxious the participants, the less they overestimated). (Fajfar, Campitelli, & Labollita, 2012)

More recently, Zou et al. (2007) used a manipulation of SFA in which high and low blushing-anxious participants engaged in a brief conversation with a female conversational partner. Those in the SFA condition were instructed to focus their attention on their own breathing, heart rate, voice, and signs of blushing. High blushing-anxious participants reported more anxiety following the SFA manipulation. Zou et al. recognised that the SFA instructions may have elicited fear of negative evaluation directly, as those with anxiety about blushing may have thought that their conversation partner was aware of their blushing and was evaluating them in light of this. Thus, this finding is open to the same alternative explanations as earlier work. George and Stopa (2008), however, reported that a mirror manipulation increased both self awareness and anxiety. It is not clear why these findings differ from those of the methodologically similar work of Bögels et al. (2002). (Jakymin & Harris, 2012)

There has been limited research that has directly examined the relationship between burnout and perfectionism. Burnout is an important variable to understand however, as it has been associated with absenteeism from work, physical health problems, and as a possible precursor to depression. Ahola et al. (2008) found that individuals experiencing burnout were more likely to experience a medical absence from work lasting greater than 9 days. Stoeber and Rennert (2008) examined the relationship between perfectionism, as measured by an adapted version of multidimensional inventory on perfectionism in sports scale, and burnout, as measured by the German version of the Maslach burnout inventory in a sample of secondary school teachers. They found a correlation between the teachers' negative reactions to failure to live up to high personal standards (PS) and burnout. Mitchelson and Burns (1998) reported a correlation between perfectionism, as measured by the FMPS total (Hewitt & Flett, 1991a), and burnout, as measured by the Maslach burnout inventory—general survey (Maslach, Jackson, & Leiter, 1996), in working

mothers, in terms of exhaustion and cynicism. Flett, Hewitt, and Hallett (1995) reported a correlation between *self-oriented* perfectionism and a measure of professional distress in a sample of teachers. However, the Flett et al. study did not contain a measure of burnout. The authors found more associations with *socially prescribed* perfectionism and measures of teacher stress, possibly because the items from the teacher stress inventory loaded on external stressors at work. (Philp, Egan, & Kane, 2012)

show that previous researchers have supported similar hypotheses, or to show that they have found sufficient data for you to deduce the predictions that your study tests.

It is common practice to read more references than you end up citing in your report. A good research report will cite only *relevant* work and will indicate why it is relevant. The quality of what you include will indicate the appropriateness of your reading. It is better to cite a few well-chosen references than to have a long and unselective reference list. Reports will lose marks if the Introduction is little more than a collection of quotes and references.

Using examples. In illustrating theoretical points or introducing technical terms, it is important to use examples. The more abstract the theory the more important it is to use examples. Kidder and Judd (1986) give a very clear contrast in the following poor and good examples of opening statements:

Poor: Festinger's theory of cognitive dissonance has received a great deal of attention during the past 15 years.

Good: The individual who holds two beliefs that are inconsistent with one another may feel uncomfortable. For example, the person who knows that he or she enjoys smoking but believes it to be unhealthy may experience a discomfort arising from the disharmony or inconsistency between these two thoughts or cognitions. This feeling of discomfort has been called cognitive dissonance by social psychologist . . . Festinger (1957), who suggests that individuals will be motivated to remove this dissonance in whatever way they can . . . (p. 432)

Jargon. Try to avoid jargon. Some people justify the use of jargon as necessary linguistic shorthand. However, an undergraduate research report should be written for a more general readership, and without assuming expert knowledge on the part of the reader. Another reason for avoiding jargon is that your use of everyday language indicates to your marker that you understand the concepts you are writing about.

Direct quotes. For the same reason, you should avoid lengthy direct quotes from your references. It is not always obvious from the use of quotations that you know what they mean. As already mentioned in Section 2.8, rephrasing them in your own words (and acknowledging the source) shows your marker that you clearly understand what you are saying.

Introducing your own study. Once you have reported what previous researchers have done in areas that are relevant to your hypotheses, it is time to say something about your own study. First you need a statement of general aims. An example is: "The present study replicated Cross and Markus (1991) using a university student sample, but also extended their work by asking [these other pertinent questions] . . .". You can also add here any special or different treatments you used, or ways your study has controlled for various problems. Such statements show that you are aware of the shortcomings of previous studies.

Hypotheses. Finally, you need concise, specific, concrete hypotheses. These are explicit statements of what you expected to find. Your expectations should be justified by what you have already said about previous research. Do not use the abbreviations "H$_1$" or "H$_0$", and do not state or write about the null hypothesis. Each hypothesis should be stated operationally. That is, the variables should be defined in words that describe how they are actually measured. You should not number your hypotheses, or present them in bulleted note form. They should be written in flowing English prose, with all hypotheses in the same paragraph. Remember to write your hypotheses in the past tense. The study has already been run or you would not be reporting on it. Therefore, say "It was predicted that participants would . . .", or "It was hypothesised that respondents would . . .". You were given some examples in Table 3.1 in Chapter 3. There are some more examples, both good and not so good, in Table 4.6, which also illustrate what the difference is!

Length of sections. There are no formal rules about the appropriate length of each section of a research report, but a rough guide is that the Introduction should be about one-third of the length of the entire report.

4.3   Method

When writing your first draft of a research report, it is easiest to write the Method first, because this section describes what was done and to whom. You will usually have been one of the participants of the experiment, or the experimenter, testing participants you have chosen or been assigned, so you should be well aware of what was done. However, in the early undergraduate years, different tutorial groups are often given different treatments, or are presented with material in a different order from other groups. Your tutor or lecturer should make this clear, so don't rely solely on what you experienced in your group.

There are three reasons for having a Method section. One is to allow your reader to judge if your results are applicable to any other groups about which the reader is interested. The second is to allow someone else to repeat your study if they so desire, and to

Table 4.6

Good and Poor Examples of Hypotheses

✗ **Poor:**
Hypothesis 1. Older adults will be less able to ignore the interspersed irrelevant material than younger adults.
(Don't number the hypotheses like this. The dependent measure is not clear. The tense is wrong.)

✓ **Better:**
It was anticipated that adults older than 45 years would be less able to ignore the interspersed irrelevant material and, as a result, would read more slowly and show poorer comprehension than adults younger than 25 years.

✗ **Poor:**
Perceived positive social support in personal relationships will be negatively associated with anxiety and mood disorder episodes. (Wrong tense, and how are these constructs measured?)

✓ **Better:**
Scores on the XYZ scale of perceived social support were expected to be negatively correlated with the number of anxiety attacks reported and also with the number of mood disorder episodes.

✗ **Poor:**
The hypothesis is that a mother's positive perception of herself will decrease the intensity of her daily hassles via social support satisfaction. (How are these constructs measured? The tense is incorrect.)

✓ **Better:**
It was hypothesised that scores on a mother's self-esteem would negatively predict the intensity of her daily hassles, and this effect would be mediated by scores on social support satisfaction.

✗ **Poor:**
The hypothesis is that student willingness to take a psychology course will depend on the gender of the instructor and the type of course being taught. (It is not clear what is actually being measured. The prediction is too general. The tense is wrong.)

✓ **Better:**
[It was] hypothesised that student willingness to take a psychology course from a feminine, masculine, or androgynous instructor would vary with the type of course being taught. Feminine and androgynous instructors would be preferred for clinical courses, which tend to emphasise personal/social skills. Masculine and androgynous instructors would be preferred for experimental courses, which tend to emphasise analytic/objective skills. (Freeman, 1992, p. 93)

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test your hypotheses on their particular sample. You therefore need sufficient detail so that someone else could be confident that by following your instructions they would be carrying out an identical experiment. The third reason is to allow a reader to judge whether your study really does test the hypotheses you claim that it tests.

The Method section is presented immediately after the Introduction *without* starting a new page. It is simply headed **Method**, in bold upper case and lower case lettering centred across the page. It contains a maximum of four subheadings:

- **Participants** (or **Subjects**, if non-human)
- **Design**
- **Materials** (or **Apparatus**)
- **Procedure**

Note that in contrast to previous editions of the APA *Publication Manual*, these are now in bold type.

Levels of headings. The Method section is a good illustration of the need to distinguish between levels of headings. In most undergraduate research reports there are only two levels of headings. One is the section headings, such as **Method** and **Results**, which are in bold type, have a capital letter then lower case letters, and are centred across the page. The other is the subsection headings, which are on a line by themselves, have a capital letter for each of the main words, are aligned with the left margin, are in bold type, and do not have a full stop. These conventions were introduced to make life easier for typesetters. Although you might argue that this reason doesn't apply to undergraduate research reports, treat it as part of the discipline of writing to a convention. Once you know about it, you don't have to make decisions each time you write a research report.

In later year research reports, you may find that you need a third level of headings, for example, for different measures under the subheading of **Materials**. You should make these sub-subheadings indented five spaces, in bold type, followed by a full stop. The content can then begin on the same line. For example:

Experience in Close Relationships (ECR-R). This 36-item test (Fraley, Waller, & Brennan, 2000) was used to measure attachment . . .

4.3.1   Participants

It should be noted that modern journals use the term "participants" rather than "subjects". This reflects the current view that these people are not passive victims of you, the experimenter, but active partners in the research. Remembering how you may have felt while completing a questionnaire or taking part in an experiment may remind you that not only are participants active, but their attitude to the study may not be what the experimenter really wanted. This should help you to not assume that they have done what you thought they were doing, and so you should regard the results with a critical and sceptical eye. "Participant" is also more specific. For this reason, within this section you should say "men" and "women" or "children", "clients" or "patients" where it is

applicable. Older journal articles tend to use the words "males" and "females", presumably to sound more objective. Modern conventions suggest that if describing people older than 18 you should use the words "men" and "women". If participants are under 18, use "girls" and "boys" or "adolescents".

You should state the number of participants tested; how they were selected; refusal rates (if known); how they were rewarded; and any relevant demographic variables such as age, sex, education, marital status, ethnicity, occupational status, or other features. What makes a demographic variable relevant is if it is used as an independent variable (such as when comparing groups of different ages), or when it specifically defines the population from which the sample is drawn. Your statement of these details allows the reader to assess how adequately you have controlled for some of these variables, and the extent to which your findings can be generalised to any other groups. Examples are shown in Table 4.7.

In describing the sample you should note that you can say "The sample comprised . . ." or "The sample consisted of . . .", but it is poor English to say "The sample comprised of . . ." or "The sample consisted 36 people . . .". Similarly, don't say "The participants were divided into two groups . . ." because it gives the impression that each person was divided! Say "The sample was divided into two groups . . .".

Table 4.7

Examples of Descriptions of Participants in a Psychology Experiment

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The participants were undergraduate introductory psychology students at a Perth university, 130 women (M = 19.6 years, SD = 2.9) and 46 men (M = 19.7, SD = 2.9), who were participating as part of a course requirement.

The sample consisted of 268 women and 76 men who responded to an Internet survey. Mean age was 35.4 years (SD = 11.7). All had been diagnosed with . . . and the mean time since diagnosis was 11.2 years (SD = 9.3). Sixty-four percent were married or in de facto relationships, 18% were separated, divorced, or widowed. Approximately half the sample (54.8%) was currently employed.

The respondents were 97 women (M = 38.5 years, SD = 9.4), each chosen non-randomly by an introductory psychology student at a Sydney university. All subjects were or had been married, and had a mean education level of 11.4 years.

The sample comprised 78 children, 44 girls and 34 boys, attending Year 6 classes in two Brisbane suburban State schools serving predominantly middle-class populations.

The participants were 12 students from the Australian National University, who received $10 in return for their participation. All participants had normal or corrected-to-normal vision and were native English speakers. (This was for an experiment on visual perception where vision was a relevant variable.)

4.3.2   Design

The purpose of the Design subsection is to lay out the basic conditions of the experiment and define dependent and independent variables. State the independent and dependent variables in their operationalised form – that is, in the units in which they are measured – and describe the groups that are being compared, and any counterbalancing of the order in which material is presented.

Check with your tutor or lecturer to find out if this subsection is required in your particular research report. In many institutions it is not a required element of the Method section. However, it is sometimes expected in your first few undergraduate research reports in order to show that you understand which are the independent and dependent variables.

When you are not expected to include a Design subsection, the operationalisation of the dependent and independent variables should be made clear in the Materials subsection where you describe how they are measured. If your study counterbalances the order of presentation of questionnaire items, say so in Materials. If different groups of participants are expected to perform different tasks, or to do them in different orders, describe this in the Procedure subsection.

4.3.3   Materials

If you use equipment it must be described in sufficient detail so that anyone wishing to replicate the study can buy, build, or otherwise acquire identical equipment. If you use a computer program, give its name, version number, and source. If the layout of the equipment is either complex or theoretically important, for example, for some perception experiments, it may be necessary to include a diagram of the layout. In this case, you should label the section **Apparatus** instead of **Materials**. It may even make communication clearer if **Apparatus and Procedure** are combined into **Apparatus and Procedure**. This allows you to say how the apparatus was used at the same time as you describe it.

In undergraduate studies, questionnaires are frequently used as the materials. If so, begin the section by saying that a pen and paper (or web-based) questionnaire was used. Say that it included demographics such as age, gender, education, and whatever else was asked. If it consisted of well-known psychological tests, include the author, date of publication, number of items and, if there are subscales within the test, state how many items are in each subscale. Also state briefly what you know of the test's psychometric properties, such as validity and reliability. State how the test was scored. If the questionnaire is one that was developed or adapted for your study, give a brief overview of it, include examples of an item or two, say how it was scored and state that a copy is included as an Appendix. Several examples are included in Table 4.8. As long as you state in your report that such an Appendix exists, showing that you know what is expected, you need not actually have one there. Think of the trees and don't waste photocopy paper (or your money!). I will say a bit more about this in Section 4.7 (Appendices).

Table 4.8

Examples of Overviews of Scales in a Materials Section

Field-independence was measured by the Hidden Figures Test (HFT; French et al., 1969). The 32-item HFT is a moderately difficult test requiring the ability to recognise simple geometric forms embedded within complex stimuli. Kardash et al. (1988) found that undergraduate students in educational psychology needed a score of 12 or better to be in the upper one-third of scores (field-independent), and a score of 8 or less to be in the lower one-third of scores (field-dependent). (Adapted from Townsend, Moore, Tuck, & Wilton, 1990)

Participants completed the Quality of Relationships Inventory (QRI) developed by Pierce et al. (1991). The QRI has three scales, two of which were of interest in the present study. These were: (a) expectations for Social Support (e.g., "To what extent can you turn to this person for advice about problems?") and (b) Conflict (e.g., "How often do you have to work hard to avoid conflict in this relationship?" and "How much does this person make you feel guilty?"). (Adapted from Pierce, Sarason, & Sarason, 1992)

Rosenberg's (1965) 8-item Self-esteem Scale (RSE) was used to assess self-esteem. Participants rated each item on a 5-point scale, from 1 (*strongly disagree*) to 5 (*strongly agree*). Overall self-esteem scores were calculated by summing across all items after reversing some items for consistency of direction of expression. Note that lower scores indicate higher self-esteem.

The three attachment vignettes originally created by Hazan and Shaver (1987) were decomposed into 13 individual sentences, each of which was answered on a 7-point Likert-type scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). To control for acquiescence response, five sentences were worded in a negative direction. An example is, "I'm nervous whenever anyone gets too close to me." (Adapted from Simpson, Rholes, & Nelligan, 1992)

If several scales are used in a questionnaire, it is not unusual to counterbalance the order in which they are presented. That is, some participants will complete the scales in a particular sequence, while other participants will complete them in a different sequence. This allows the researcher to take account of possible practice, fatigue, or learning effects. Typically, you should report it here in the Materials section. Having described the scales, say something like: "The order of presentation of the scales was counterbalanced to check for learning effects."

Do not include materials that can be taken for granted, such as the fact that a pencil was used to fill in the questionnaire or the location of the desk used unless these are somehow pertinent to the results.

4.3.4 Procedure

This subsection is a fairly detailed description of how the study was carried out. Again, the detail should be such that it could confidently be replicated. For example, instructions given to participants should be quoted in full if they are fairly brief, or overviewed and referred to as present in an Appendix. Avoid abbreviations if you can. If you think abbreviations *are* necessary, use obvious ones that do not need tricky interpretations, and always define them the first time you use them. There are some examples illustrated in Table 4.9. Include how you controlled for extraneous nuisance factors, such as time, place, and possible experimenter bias.

You should also describe how tests were administered and by whom. If deception is involved, include any "cover story" you told the participants. It is probably best to go through the procedure in the sequence that a participant experienced it, including debriefing, statements about written consent, whether you caused the participants to feel any embarrassment or discomfort, and whatever procedures you took to ensure anonymity. Kidder and Judd (1986) put it nicely when they say that you should describe how you ensured that participants were treated with dignity and left with their self-esteem intact, and any respect they might have had for you and psychology enhanced rather than diminished.

Do *not* state that your tutor or lecturer collated the results for you, even though it may be true. Remember that you are writing the report as if *you* were the researcher who designed and carried out the study.

It is important not to confuse the Materials and the Procedure subsections. The Materials subsection describes what equipment or questionnaires were used in the study, and the Procedure subsection describes how the data were collected. Many modern journal articles do combine Materials and Procedure sections, but that is usually because they are reporting multiple studies in one article. At undergraduate level it is better to stick to the separate sections. When you get to the stage of writing for publication you can decide whether to "bend the rules".

Table 4.9

Examples of the Introduction of Abbreviations

The sample comprised 46 monozygotic (MZ) and 52 dizygotic (DZ) twin pairs.

An analysis of variance (ANOVA) was calculated . . .

We propose an Abridged Big Five Dimensional Circumplex (AB5C) . . .

Participants completed the Minnesota Multiphasic Personality Inventory (MMPI).

Electromyographic (EMG) signals were measured with an eight-channel telemetry system . . .