

## Discussion

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2 This study investigated the relationships among stress, personality type, anger [1A] and chronic  
3 disease. Two of the four hypotheses, discussed previously, were **found to be true** [2]. Consistent with  
4 the work of Garon and Mantel (2003), the correlation between stress level and disease was **very**  
5 **significant**. [3A] However, **its** [4] worth noting that the **affect** [5A] of personality type was **statistically**  
6 **insignificant** [3B]. The lack of relationship between personality and chronic disease is inconsistent with  
7 previous studies (**Harrison et al., 2006; Davis, Wolf and Jones, 2004**). [6 A, B] The ANOVA  
8 that **compares** [7] high- and low-anger participants yielded the most **significant finding**  
9 ( **$p = .001$** ). [3B] The **data was** [8A] consistent with previous research showing that anger **effected** [5B]  
10 stress level (Harrison, Holstein, Calf, Grobeck, & Nelson, 2006) [6C] Higher levels of reported anger  
11 were associated with **significantly less stress**. [3C] These findings have important implications for health  
12 psychologists. Facilitating a person's expression of anger can reduce stress and lower **their** [9] risk for  
13 disease.

14 Two of the desired inclusion **criterion** [8B] for the participant sample were not met. The vast  
15 majority of subjects [10] were Caucasian. **Orientals** [11A], **Mexican-Americans** [11B], and **blacks**  
16 [11C] accounted for only 9% of the sample. Also, there were too few female participants; there were  
17 **twenty-five women** and **two hundred** men.[12] Thus, the data could not be used to examine whether  
18 gender or ethnicity **impacted** [5C] risk for disease. [13]

19 This study extends the work of Parlick & Wilson (2007) [6A] whose research the American  
20 Psychosomatic Society (as cited in Parlick & Wilson, 2007) recently honored as "**cutting edge in the**  
21 **field**". [14] They argue, "The progress made in late 20th century stress research has exceeded  
22 expectations.. Our rapidly growing understanding of psychological factors, **in the development and**

23 **treatment of chronic disease, [1B]** has set the stage for major breakthroughs in health psychology (p.  
24 **195).” [14]**

25 **Bibliography [15 A, B]**

26 Davis, T., Wolf, M., & Jones, F. (2004). Disease and personality. *Psychological Summaries*,  
27 45, 45-67.

28 Garon, D. [ 15C] and [6A] Mantel, J. (2003). Stress and disease. In M. Wilson (Ed.), *Psychology of*  
29 *Disease [15D] (p. 12-38). [15E]* Boston: Po Press.

30 Harrison, B. T., Holstein, C., Calf, F. T., Grobeck, A., & Nelson, F. V.(2006). Introversion-extroversion  
31 predicts disease states [Electronic version]. *Psychological Summaries*, 43(4), 257-289. Retrieved,  
32 December 8, 2007 from <http://healthcareusa.com.htm> [15F]

33 Parlick, T., & Wilson, M. (2007). *Health and Mind. [15D]* Paris: Dix.

## Description of Errors

This section describes each kind of error and how to correct it.

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### 1. USING COMMAS (American Psychological Association [APA], 2001, pp. 78-79, 207)

When to use and not use commas can be confusing. The following rules will help you avoid some of the more common errors.

**1A.** Use commas after each item in a list of three or more. This holds when using the terms “and” or “or.” Line 2-3 should read “... personality type, level of anger, and disease.” One exception to this rule concerns entries in the reference list with only two names. In such cases, place a comma after the first name “Parlick, T., & Wilson, M. (2007).”

**1B.** Sentences can contain phrases that serve to qualify or refine the main point. Use commas to set off these phrases if removal of the phrase does not alter the essential meaning or damage the grammatical structure of the sentence. In Line 3, “discussed previously” can be set off by commas because its removal does not alter the nature of the “hypotheses” that the phrase describes. Do not use commas if removal of the phrase alters the meaning of the sentence. The quoted phrase “in the development and treatment of chronic disease” in Lines 24-25 should not be set off by commas because it is critical in defining the nature of “psychological factors.” Please note that when you want to use a quote that contains a grammatical or spelling error, you do not correct it. Instead, indicate your recognition of the error by inserting *sic* in brackets following the error (APA, 2001, p. 118).

For more on commas go to <http://www.towson.edu/ows/moduleCOMMA.htm>

## **2. THE TRUTH ABOUT HYPOTHESES** (Kazdin, 2002)

Hypotheses are never “found to be true.” This is because the outcomes of statistical analyses are statements about probability (i.e.,  $p$  values). Acceptable ways to describe the outcomes of a study include saying that a hypothesis has been “supported,” “adopted,” or “accepted.”

## **3. THE SIGNIFICANCE OF “SIGNIFICANT”** (Kazdin, 2002)

The term “significant” has multiple meanings. When you use this word, be sure that readers will infer the correct meaning.

**3A.** Results are “not very,” “almost,” or “slightly” significant. A  $p$  value of .01 is not more significant than .05 or less significant than .001. A statistical test is significant (in the statistical sense) or it is not.

**3B.** When you discuss the outcome of a statistical test, note that “insignificant” does not mean the same as “not significant.” Describing a result as “insignificant” indicates that it is not meaningful or important. A result that is “not significant,” in the statistical sense, indicates a lack of difference between groups or responses. Failure to find a statistically significant result is accurately described as “the results were not significant,” “the results did not reach the .05 significance level,” or “the data failed to support the hypothesis.”

**3C.** If you have never taken a statistics course, “significant” is synonymous with “important,” “meaningful,” or “noteworthy.” However, when researchers use the term “significant,” they usually are describing the outcome of a data analysis as “statistically significant.” Beginning science writers need to realize that statistically significant results may not necessarily be significant (i.e., noteworthy) results. The sentence (Line 12) that

reads “. . . higher levels of reported anger were associated with significantly less stress” leaves the reader wondering whether the authors are referring to the outcome of a statistical test or noteworthiness of the finding (i.e., less stress). After writing about statistical significance in the results section, many students become primed to use the term in the discussion section. Take care not to confuse your reader about the meaning of “significant.”

#### **4. POSSESSIVE OR CONTRACTION: IT’S A RULE BREAKER** (Brians, no date)

In Line 5, “its” is meant to represent “it is.” The contraction of “it is” is “it’s.” When it comes to academic writing, using contractions like “it’s” to mean “it is,” is best avoided. Instead, write out both words: it is.

Many students see “it’s” and assume it is really a possessive. As learned in grammar skill drills, to indicate that Sally owns her horn, you add an apostrophe and the letter “s”: Sally’s horn. But when “it” owns something, there is no apostrophe: “its horn.” “Its” breaks the rule for making a possessive.

#### **5. AFFECT VS. EFFECT** (Brians, no date)

The terms “affect” and “effect” are not interchangeable. Learning their correct usage is a challenge.

**5A.** The distinct meanings of affect and effect are most salient when these two words are used as nouns. As a noun in psychological articles, “affect” usually refers to feelings or emotions. “Effect” refers to an outcome, result, or consequence. Hence, “affect” is definitely wrong in Line 6. “The effect of personality type...” might be correct if the authors are talking about how personality caused an outcome. However, neither affect nor effect correctly conveys this particular outcome. The authors are referring to correlational

data (i.e., the relationship between personality type and disease). Correlations are statements about relationships and do not support conclusions about the nature of a relationship (e.g., what is the cause and what is the effect). The correlation between two variables is best described by terms like “associated” or “related.” The authors could rewrite the sentence: “There was no association between personality type and disease.”

**5B.** Distinguishing between “affect” and “effect” in their verb form is more difficult. “A affected B” is not synonymous with “A effected B.” “To affect” means “to influence” whereas “to effect” means to bring about, cause, or create. In Lines 10-11, to say “anger effected stress” suggests that anger produced or caused stress. On the other hand “anger affected stress” indicates that anger altered or changed stress in some way without specifying the nature of this influence.

Deciding which term is correct requires you to know the author’s theory about how two variables are related. If you cannot decide, then you cannot go wrong by using “affected” because a cause is one type of influence. Most articles in psychology use “affect” rather than “effect” as the verb because direct causal relationships are difficult to demonstrate with complex psychological phenomena. “Effect” is most commonly used in its noun form.

If you are still confused about when to use affect and effect, turn to the following exercise: [http://owl.english.purdue.edu/handouts/interact/g\\_affecteffect.html](http://owl.english.purdue.edu/handouts/interact/g_affecteffect.html)

**5C.** When students are confused about whether “affect” or “effect” is correct, they might use a synonym. A common one is “impacted.” Some grammarians question whether this term is appropriate outside of dentistry. Because “impacted” is a colloquial way to say “had an effect,” it is better restricted to informal writing and avoided in academic papers.

**6. CITATIONS IN THE BODY OF THE PAPER** (APA, 2001, pp.207-214)

To avoid plagiarism you must cite references whenever your paper incorporates another's ideas.

**6A.** The “and” in “Davis, Wolf, and Jones” should be an ampersand (&): “Davis, Wolf, & Jones.” Use ampersands for citations placed within parentheses in the body of a paper; always use them in the reference section (Line 30). An “and” appears between authors' names only when a citation is part of a sentence in the body of the paper. Thus, in Line 21, “Parlick & Wilson (2007)” should be written as “Parlick and Wilson (2007).” If the authors had not read Parlick and Wilson (2007) in the original, but had taken this quotation from another publication, the citation would appear as it does in line 22: “the American Psychosomatic Society (as cited in Parlick & Wilson, 2007).”

**6B.** List citations in alphabetical order rather than by dates as they are in Line 8. The one exception to this rule occurs when you cite several works by the same author; order these by date from the earliest to most recent. If several publications share the same year, distinguish them by the addition of a letter following the dates (Grover, 1984a, 1984b, 1996).

**6C.** In Line 11, “Harrison, Holstein, Calf, Grobeck, & Nelson, 2006” is an error because this citation previously appears in Line 8 as “Harrison et al.” Use of “et al.” (meaning “and others” in Latin) indicates that the full citation appeared earlier in the text and the citation has more than three authors. Thus Line 11 should also be written “Harrison et al., 2006.” The one exception to this rule occurs when the reference has six or more authors. In this case, you will be happy to know that “et al.” is used the first time you cite the reference.

A quick guide to citations is <http://owl.english.purdue.edu/owl/resource/560/03/>.

### **7. VERB TENSE** (APA, 2001, p.33)

Verb tense needs to be consistent within a given section. Write results and method sections in the past tense because you are reporting what has been done and found. When you interpret results in a discussion section, use the present tense. Up to this point, the authors have been describing (not interpreting) results and using the past tense. However, in Line 9, the authors' description of the results has slipped into present tense (i.e., "compares" should read "compared").

### **8. SINGULAR AND PLURAL: PARALLEL STRUCTURE**

Good writing requires parallel structure between subject and verb; more than one subject requires a plural verb whereas one subject has a singular verb. Some words have the appearance of being singular when they are plural.

**8A.** Too often writers mistakenly assume that "data" is singular so they use a singular verb as in "data was" in Line 10. In fact, the word "data" is a plural noun and datum is the singular version. Line 10 should read, "the data were."

**8B.** Like "data" the plural nature of "criteria" often is missed. "Criterion" is its singular form. Thus, in Line 15 "two of the desired inclusion criterion" should be "criteria."

Similarly, writers often misuse "phenomenon" and "phenomena." Words such as "number," "none," and "faculty" are confusing because writers may use them as singular or plural depending on the context.

### **9. HIS/HER AND S/HE** (APA 2001, pp. 66-67; 70-72)

Writing was easier when everybody was a "he." Now when you begin a sentence about a person, you may need to decide later in the sentence if the person is a "he," "she," or a



“s/he”? Is a thing “his,” “her,” or “his/her” item? Many students avoid this dilemma by resorting to the gender-neutral plural words: “they,” “theirs,” or “them.” This solution is acceptable as long as the beginning of the sentence refers to more than one person. The sample sentence (Line 14) is incorrect because it begins with reference to a single person but ends with “**their** risk for disease.” In its current form the sentence would need to end in “**his or her** risk for disease.” APA style recommends limited use of such combinations. Instead, rephrase the sentence to avoid biased or ambiguous language. The sample sentence could be rewritten: “Facilitating a person’s expression of anger can reduce stress and lower the individual’s risk for disease.”

#### **10. WHEN SUBJECTS BECOME PARTICIPANTS** (APA, 2001, pp. 63-66)

You may use the terms “subject” and “sample” when discussing statistics. In all other cases, you should use “participant” or “respondent” because these terms convey a sense of active involvement in psychological research. This rule only applies when writing about people. Even though animals are vital for psychological research, it remains acceptable to describe rats, mice, and monkeys as “subjects.”

#### **11. RACE AND ETHNICITY** (APA, 2001, pp. 67-68; 74-76)

**11A.** The preferred terms for designating race and ethnicity change rapidly. African American has replaced Afro-American. “Oriental” is an outdated descriptor. Asian is preferred.

**11B.** No hyphens should appear between these words: Mexican American or African American.

**11C.** Racial and ethnic groups are proper nouns and thus you should capitalize them: in Line 17 “black” needs to be changed to “Black.”

**12. IS IT TWELVE OR 12?** (APA, 2001, pp. 122)

The general rule is that all numbers greater than nine are presented in their numerical form, whereas those less than 10 are written out. Line 18 should be written as 25 women and 200 men. Not too surprisingly, the Publication Manual lists many exceptions to these rules. Both numbers are written out when (a) comparing one number to another as long as one number is equal to or greater than 10 (e.g., 5 trials out of 20); (b) a number precedes a measurement (e.g., 6 grams) or represents a mathematical function (12:5) or percentage (e.g., Line 17 is correctly written as 9%); or (c) numbers are used to represent age, experimental scores, time, or number of participants, even when fewer than 10. For example, it would be correct to write “The researchers interviewed only 9 women.” Of course there are exceptions to these exceptions. Any number that begins a sentence needs to be in word form (e.g., “Nine women were...”). For more on numbers see <http://www.docstyles.com/apa17.htm>.

*A note on style:* In general, specific numbers, such as sample size or test results ( $p < 001$ ), are provided only in method and result sections. Discussion sections examine sample size and explore the meaning of the results without reiterating the specific numbers that appear in other sections. In this article, Line 18 could simply refer to the unbalanced gender distribution of the sample.

**13. Make Your Sentences be Active** (APA, 2001, pp. 36-44)

Overuse of passive voice does not engage the reader. Active voice is preferable. Lines 19-20 are in the passive voice: “Thus, the data could not be used to examine whether gender or ethnicity **impacted** [5C] risk for disease.” One alternative would be “Thus, we were unable to examine whether the risk of disease differed as a function of gender or

ethnicity.”

You may be surprised that this correction contains “we.” Many students are taught that scientific writing avoids use of “I” or “we.” In fact, writing with these pronouns is consistent with APA Style. “I” is used when you are the sole author. “We” refers to multiple authors. Never use the editorial “we” where “we” refers to some unspecified group of people that may or may not include you, the author.

#### 14. QUOTATIONS (APA, 2001, pp. 82-83)

Does the punctuation go inside or outside of quotation marks? The general rule is that the period or comma goes inside quotation marks. All other forms of punctuation go outside of quotation marks. Thus, in the quote describing the preeminent position of Parlick and Wilson’s research (Line 22) the period should appear inside the quotation marks. This rule does not hold when a quotation is followed by the citation of its source. In this case, the quotation mark designates the end of the quotation. This is followed by the citation and a period. Thus, Line 25 should read “. . . **health psychology**” (p. 195). You do not need to write “Parlick and Wilson, 2007,” because the preceding text includes this information.

The quotation by Parlick and Wilson is fairly lengthy (37 words). A quotation of 40 or more words should be placed in block form without quotation marks and ended with a period. The citation (including the page number) would appear in parentheses after the period.

As a rule, avoid lengthy quotations. Instead, use your own words to rephrase the ideas conveyed by the quotation. Using your own words does *not* mean replacing a few of the author’s words with words that have similar meanings or re-ordering words.

Paraphrasing involves your rendition of the main ideas. To indicate that these ideas represent another person's thinking, cite the author and date, but not the page number.

Sometimes you cannot avoid lengthy quotations (e.g., you need to include an exact list of DSM-IV diagnostic criteria). For further guidance on quoting and paraphrasing see

<http://owl.english.purdue.edu/owl/resource/563/01/>.

**15. REFERENCES** (APA, 2001, pp. 215-281)

**15A.** Journal articles require reference lists. Reference sections include only sources used in the article. A bibliography includes cited sources as well as resources for further reading.

**15B.** When typing a paper, begin the reference list on a new page.

**15C.** Normally, a comma is not used when there are only two items joined by "and."

However, whenever a reference has more than one author, use a comma to separate each name (Line 30).

**15D.** Capitalization is probably the greatest source of confusion when authors write references.

Books: Use a capital letter for only the first word of a book title. The book containing the Garon and Mantel chapter is cited correctly as *Psychology of disease*. The Parlick and Wilson book should be written as *Health and mind*. Please note that capitals are used for any proper names in a title and for the first word after a colon.

Journals: Although a journal may seem less substantial than a book, the first letter of all the major words in a journal title is capitalized: *Psychological Summaries*. The article title, like the title of a book chapter title, is not fully capitalized.

**15E.** Indicate a single page by "p." Indicate multiple pages by "pp." When citing a

chapter from an edited book, give the page numbers of the chapter. Thus, the Garon and Mantel citation (Line 31) should read “pp. 12-38” and not “p. 12-38.” Note that the Davis, Wolf, and Jones citation contains neither “p” nor “pp” because this is a journal. For a succinct overview of how to format references see

<http://owl.english.purdue.edu/owl/resource/560/05/>.

**15F.** With the growth of resources on the Internet, a whole new set of referencing formats has been developed. The inclusion of “electronic version” in Line 34 is no longer necessary. Likewise, for static content, such as books and journal articles, you do not need to include a retrieval date. Take note that this reference includes the volume and issue number. It used to be that the issue number only was included when a journal did not have continuous page numbers for each volume (i.e., each issue within a volume began with page one). Now it is recommended that issue numbers be included, when available, for all electronic references.

For the most up to date description of online citation options see *APA Style Guide to Electronic References* (2007) or <http://apastyle.apa.org/elecmedia.html>.

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