

A Few Thoughts on Manuscript Reviews for a Journal

You may at some point be asked to review a manuscript that has been submitted for publication. Journals generally provide you with guidelines for evaluating the manuscript. In your first few reviews, you may want to adhere to the guidelines, but as you gain more experience, you should also have confidence in your ability and develop your own reviewing style. In the guidelines of one journal with which John and Chris are very familiar, reviewers are asked to consider such things as the level of interest others in the field might have, the originality of the manuscript, the author's familiarity with the field, the appropriateness of the methodology and statistical analyses, the appropriateness of the conclusions, and writing style. Regardless of the quality of the article that you are reviewing, as with all other forms of critique, it is important to be fair and to suggest improvements that could actually be made. For instance, if a study is a secondary analysis of data collected for another purpose, it may not be fair to suggest that the authors collect additional data. Your job is not to find as much fault as possible with a manuscript, but to offer feedback that could either improve a manuscript that is potentially publishable or respectfully explains your opinion why it is not. Reviews that are disrespectful can discourage novice scholars and frustrate those who have experience. We suggest that you consider yourself as being in the role of a peer advisor engaged in a written dialogue with the author, albeit a dialogue that may be one-sided if you do not recommend the manuscript for publication. If you happen to be on the receiving end of a manuscript for review, you may want to consult *Navigating Academia*, which is published by the University of Michigan Press (Swales and Feak, 2011).

Several manuals advise students not to use scare quotes, but, in fact, they are used quite often and largely successfully in the MICUSP data. Scare quotes of the first type can show sophistication about disciplinary concepts and, those of the second type, sophistication about academic language. However, there is a great deal of disciplinary variation here. Scare quotes are most common in Sociology, presumably because writers want to show that they can be distanced and careful about “troubled” concepts such as *class* or *culture* (*troubled* is itself a scare quote). They are also frequent in History, Linguistics, and English but rare in fields like Civil Engineering, Mechanical Engineering, and Nursing. The MICUSP data also shows that the use of scare quotes among student writers slowly increases from the final undergraduate year to the third year of graduate school. Finally, our study of the MICUSP data reveals that compared to their native speaker counterparts, non-native speakers are somewhat less likely to employ scare quotes.

You can find several sample texts in this volume that make use of scare quotes; one text with many such uses is the Unit Two text about reality TV (pages 56–58). You will also notice that on occasion they appear in this textbook.

Our advice on the use of scare quotes is that, if you are working in a humanities or social science field, certainly use scare quotes in moderation. However, do not overuse them. In the “hard” sciences (another scare quote), they are infrequent.

TASK TWENTY

Choose one of these tasks. Write a short reaction to a paper in your field or to an oral presentation you have attended. Alternatively, write a paper that reacts to Unit Six. You may want to consider some of the questions offered earlier in this section or focus on something else.



Language Focus: Non-Standard Quotation Marks (Scare Quotes)

The standard uses of quotation marks indicate

- the exact written words of other writers
- quoted speech
- unusual technical terms
- linguistic examples (as in “*quote*” is a five-letter word)

In addition, there are other uses of quotation marks that are not standard; these are commonly called *scare quotes*, and they function similarly to the way “air quotes” or “finger quotes” are used by speakers to show they are not to be understood literally. Scare quotes consist of two main types. First, there are “distancing” scare quotes that often have a so-called function, as in this example.

... (in some countries) dishonest superintendents sometimes take a new teacher's first paycheck as “payment” for having helped the teacher secure his or her position

MICUSP File EDU.G2.01.1

Here, of course, it is not really a payment, but more of a bribe or kickback.

Given the distancing effect, you can see that scare quotes may be very useful in writing a critique, particularly when you may question an author's opinion.

The author argues that we are all, in some sense, “screened” from reality.

The second type of scare quote has to do with *stylistic* matters; here the writer wants the reader to recognize that the writer knows that a word or phrase does not necessarily conform to expectations of academic style. Here is an example from another MICUSP paper from Education. Obviously, the use of “*cool*” is not a typical adjective in academic writing.

Learning about what causes the large and dangerous flashes of lightning they see during thunderstorms will be “cool” and engaging.

MICUSP File EDU.G0.06.3

1. Make a list of all the personal expressions used in the reaction papers.
 2. How would you say the reactions are organized? Are they similar to a problem-solution or general-specific text?
 3. In which sentence(s) do the authors make use of their own experiences? Are these personal experiences effective?
 4. The writers of these reaction papers do not offer an overall positive reaction to teamwork, focusing instead on the drawbacks. Do you think they have adequately explained their perspectives?
 5. Do the reactions make good use of the teamwork article? Why or why not?
 6. Were any of the authors' comments interesting to you? Which one(s)?
 7. Where would you place the writing style of each text on a continuum from highly informal to highly formal? Does the style seem appropriate?
 8. Which of the two papers has the better title? Why?
 9. Is one of the reactions stronger than the other? How did you decide this?
 10. Compare one or both of the reaction papers to the critique you wrote for Task Sixteen. In what significant ways do the papers differ?
-

⑩ Although the research shows that teams are exponentially being cited more than individuals, I would argue that in some cases, two heads are not better than one, but rather double the work.

Kohlee Kennedy

B.

Response: Group Work

① Personally, I find that in linguistics, the classic approach of “armchair linguistics” is often applied to my work in that I rarely work in groups. ② However, when I do find a class or assignment where teamwork is required, it is often time that is not fulfilling. ③ Most of the time is spent on organizing when the team will meet, who will do what; ④ and more than likely, one or more members will not pull their weight and will drag the overall performance of the group dynamic down. ⑤ For instance, I had a group project my freshman year of college that involved a brief presentation and a paper for a psychology course. ⑥ My teammates, while claiming to be good students, did practically none of the work, and the work that they did was subpar. ⑦ This forced me to do most of the work myself, which was incredibly frustrating, and it gave me a skewed view of working with others on a project.

⑧ Nevertheless, according to Wuchty et al. (2011), teamwork produces higher quality work, as made evident from the number of citations coming from groups vs. citations from individual authors. ⑨ While teamwork may be beneficial, in these settings, these are researchers who have established rapport with each other and have similar educational backgrounds. ⑩ In contrast, the group work settings that I often work in are with students from different majors and who are strictly classmates. ⑪ These two factors may contribute to my personal bias against group work, but I can understand the benefits of several people working towards a research or practical goal.

Patrick Kelley

TASK NINETEEN

Read these two short student reactions to the teamwork text given in Task Ten and answer the questions on page 273. We have numbered independent clauses as sentences for ease of discussion. Consider which of the two reaction papers you would prefer to have written and which would likely appeal to an instructor.

A.

Personal Reaction: “The Increasing Dominance of Teams in Production of Knowledge”

❶ The article “The Increasing Dominance of Teams in Production of Knowledge” discusses the impact of teams, as opposed to individuals, on the production of research today. ❷ A team of researchers themselves, the writers convey the idea that unless one is the next Einstein, Kant, or Newton, one’s individual genius is not on par with a combined effort. ❸ From my experience, this can be true; ❹ for example, if I am schooled in syntax and my partner in semantics, our exploration of the interface of the two will be significantly improved by our coordination.

❺ However, as a leader, a perfectionist, and a person who focuses best alone, I have found that coordination of effort can have its drawbacks. ❻ When working in teams, I often find myself doing all of the work, having to redo all of the work, or spending so much time getting others to do their work that our output is worse than if I had done it myself. ❼ And while I have had my share of successful team efforts, I have always found it difficult to decide how my team should go about it; ❽ if each person is assigned one portion, one runs the risk of losing potential ingenuity in a team member’s portion and missing something fundamental about one’s own. ❾ And if everyone does the same thing and then reconvenes, it is often the case that the most dominant personality, rather than the most competent work, survives.

TASK EIGHTEEN

Write a critique of a paper from your own field. Consider beginning with a brief summary. Make sure that there is a good fit between your summary and critique.

Reaction Papers

Throughout this book, we have placed strong emphasis on academic style. We will continue to do so in Units Seven and Eight. However, in this section of Unit Six we would like to introduce you to a kind of critique that permits—and encourages—a more personal and informal style of writing: reaction or response papers. Reaction papers may be more common in the U.S. than elsewhere.

Reaction papers encourage students to draw on their own experiences, feelings, and ideas as well as to make methodological and analytic comments in relation to, for instance, a talk or a written text. When writing these papers students sometimes consider these questions.

- What was the text or the talk about?
- Who wrote the text or gave the talk?
- What was the main message of the text or the talk?
- How do you feel about what you read or heard?
- What impressions did the text or talk have on you?
- What do you agree or disagree with?
- How does what you read or heard relate to the course in which the reaction paper was assigned?
- Can you identify with or do you see yourself in what you read or heard?

International students can often have an advantage here because they can incorporate observations and experiences that reflect their own special backgrounds, although this genre may be completely new to them and be particularly challenging to write. Often, the comments in a reaction paper will open instructors' eyes to new thoughts and ideas on a topic.



Language Focus: Inversions

You already know that English usually requires an inverted word order for questions. You also probably know that a different word order is required if a “negative” word is used to open a sentence.

Not only has the author presented some valuable new information, he has also presented it in a very clear and coherent manner.

In no case do the authors provide any statistical information about their results.

Notice how the auxiliary verb precedes the subject, as in a question. Now look at this statement, first inverted, and then in normal word order.

Particularly prominent were functional strategies

Functional strategies . . . were particularly prominent.

This kind of inversion, even with simple adjectives or participles, is quite common in poetry (*Broken was the sword of the king*). However, in academic English, it only occurs with expressions that are emphatic (e.g., *particularly*) or comparative (e.g., *even more*). The inversion is a strong highlighting device and should only be used for special emphasis, as when we want to single out one result/fault/problem/virtue from many others.

TASK SEVENTEEN

Complete the following inversions.

Example: *Particularly interesting*

*Particularly interesting was the way in which Cheng introduced
sociological ideas about the influence of older scientists on
younger scientists.*

1. *Especially notable* _____
 2. *Much less expected* _____.
 3. *Especially noteworthy* _____.
 4. *Of greater concern* _____.
-



Language Focus: Beginning the Critique

Most likely you will begin your evaluation of an article with a summary. After the summary, you then need to make a transition into your analysis. Finding just the right sentence to begin your critique can indeed be a challenge. We read through several commentaries (critiques) published in *Behavioral and Brain Sciences*, one of the growing number of journals that publishes expert responses to manuscripts. We found some very interesting opening sentences, which we have transformed into skeletal sentences for you.

[Authors' names] present a plausible case that . . . Less adequate is their discussion of

[Authors' names] take on the difficult task of Unfortunately,

[Authors' names] present an important discussion of

Although we may not agree on all the issues raised in the article, we praise the authors for

The article by [author name] is an ambitious feat of synthesis, encompassing diverse theories of This effort, however, is not fully successful.

[Authors' names] have written an important and timely article on Despite its many strengths there are a number of small, but important, weaknesses.

[Authors' names] present a compelling argument for . . . ; however,

While the authors' position that . . . is attractive, there are a number of weaknesses in this concept.

Published commentaries (also referred to as *reactions*, *comments*, *responses*, or *discussions*) can be extremely interesting, as they often highlight key debates within your field. Do you know of a journal in your field that publishes them? If you can find and examine such a journal, you will see the large difference in style between the research article and the commentary.

- 9. I do not understand why the authors looked at humanities or, I should really say, the arts. Do artists or creative writers work in teams to produce published work?
- 10. I think the authors should have looked at the country of origin of the papers to see whether the impact of teams is stronger in one part of the world or another.

Do you have any other criticisms of the teamwork article that you consider fair and reasonable? Work in a group to come up with at least two more. Be prepared to offer them to the class.

While negative criticism is to be expected, thinking only negatively is probably ill-advised. After all, instructors rarely choose articles for critiquing because they think they are worthless. Further, you do not want to give the impression that you are only a “hatchet” person—someone who is unable to find anything positive and does nothing but criticize. If you do offer a largely negative critique, consider offering something positive with the negative.

The authors provide a small piece of research on an interesting topic.

However, the study suffers from exhibits can be criticized on several counts raises a number of limitations. several weaknesses. as many questions as it answers.

To be fair, negative criticism of a short communication (see Unit Seven), should perhaps be qualified (see Unit Four). Here is an example.

However, *at least in its current form*, the study *apparently* suffers from a number of limitations.

TASK SIXTEEN

Write a draft of your own critique of the teamwork excerpt in Task Ten.

To be fair in your evaluation also keep in mind the genre you are dealing with. Our expectations for a conference abstract are, of course, different from those for a research paper and should again be different for a short communication. In a short communication, such as the teamwork article, authors cannot be expected to provide all the background information readers might require to have a complete understanding of the issue. We would, however, expect a full article to provide significantly more detail.

TASK FIFTEEN

Here are some comments on the teamwork excerpt that were made by some of our students. Discuss the comments and consider whether they would contribute to a fair critique and to author positioning. Mark the points that you think would be worthwhile to include in a critique with a check mark (✓). Remember that even if a comment is fair, it may not be worth including in a critique.

- _____ 1. The number of articles included in the study seems large enough to support the conclusions.
- _____ 2. The article is written in a style that is easy to follow.
- _____ 3. We do not know where the patent data comes from. It might only be the U.S. patents.
- _____ 4. There is a lot of information in the supplement that we cannot easily see. The supplement information should be in the article.
- _____ 5. The definition of self-citation does not seem quite right. Maybe the way this is defined influences the results.
- _____ 6. I think the figures are hard to read.
- _____ 7. The authors looked only at the Institute for Scientific Information (ISI) Web of Science database and patent records, so they might have missed a lot of work that is not recorded in these two places.
- _____ 8. The research seems to have been carefully done.

TABLE 17. Adjectives of Praise and Blame among Historians, Sociologists, and Physicists in Britain and the United States

	Good Work	Average Work	Poor Work
Humanities	scholarly original	sound	thin
Social sciences	perceptive rigorous	scholarly	anecdotal
Physics	elegant economical	accurate	sloppy

Becher, 1987. Copyright Taylor & Francis. Used with permission.

List some typical evaluative adjectives (both good and bad) used in your field. What about *neat* or *kludgy*, for example?

Critical Reading

The discussion so far has strongly pointed to the need to engage in critical reading combined with critical thinking about both what is given in a text and what is not. Also important is your evaluation of how the text delivers its message. Critical reading is more than simply reading carefully. As we have pointed out, your reading should allow you to evaluate other work by making inferences and interpretations. This involves taking into account what you already know, have read, or perhaps have recently learned in a course. By synthesizing all of these elements you can reveal not only *what you know*, but also *what you think* about published work in relation to some reasonable criteria.

As you read critically and formulate your evaluation, it is also important to be fair. After all, being seen as fair and reasonable is part of graduate student positioning. For example, it may not be fair to criticize the teamwork article for not looking at whether the teams consisted of mostly men or women. For one, the paper was clear about its focus on the broader issue of teams and, for another, trying to determine gender on the basis of author name would likely be extremely difficult, if not impossible, in some instances. This is not to say that team characteristics are not worthy of investigation; it would, in fact, be reasonable to suggest this as a way to extend this line of inquiry.

TASK FOURTEEN

Rate the adjectives using the scale. Use the sample sentence to guide your decision.

++ very positive + positive 0 neutral/ambiguous - negative -- very negative

In this _____ study, the authors attempt to show that domesticated animals are in some way just as responsible as automobiles for our current CO₂ imbalance.

_____ unusual	_____ limited	_____ ambitious	_____ modest
_____ small	_____ restricted	_____ important	_____ flawed
_____ useful	_____ significant	_____ innovative	_____ interesting
_____ careful	_____ competent	_____ impressive	_____ elegant
_____ simple	_____ traditional	_____ complex	_____ small scale
_____ exploratory	_____ remarkable	_____ preliminary	_____ unsatisfactory

Evaluative Adjectives across Disciplines

Classes composed of students from several disciplines do not always agree about these adjectives listed in Task Fourteen. This is fully understandable. Take the case of the *simple/complex* contrast. Students in the sciences and medicine, for example, think of *simple* as a positive and *complex* as a negative. For such students, *simple* equals “well planned” or “clearly designed,” and *complex* equals “confused” or “messy.” In contrast, social scientists equate *simple* with “unsophisticated” and *complex* with “sophisticated.”

In an interesting study (note the evaluative adjective!), Becher (1987) surveyed adjectives of praise and blame among historians, sociologists, and physicists in Britain and the United States. He found considerable differences among the three groups. Although the preferences listed in Table 17 only indicate general tendencies, they are quite revealing.

Adjectives

The protocol described in the paper is *successful* at accurately tracking randomly moving targets over a wide range of speed.

The article is *unsuccessful* at convincing readers of the benefits of new taxes on all-electric vehicles to compensate for shortfalls in the federal highway budget.

Note the difference in the strength of claim in these two versions.

Early papers *unsuccessfully* attempted to use cross-section distributions of accident counts to distinguish between true and spurious state dependence.

Early papers *failed* to use cross-section distributions of accident counts to distinguish between true and spurious state dependence.

Sometimes, we can make contrasting pairs of adjectives. The pairing of a positive and a negative can certainly soften the criticism.

In this *ambitious, but flawed* study, the authors attempt to show that domesticated animals are in some way just as responsible as automobiles for our current CO₂ imbalance.

In this *flawed, but ambitious* study, the authors attempt to show that domesticated animals are in some way just as responsible as automobiles for our current CO₂ imbalance.

Notice how the emphasis changes depending on the information you place first. Can you create three other suitable combinations?

In addition to pairing adjectives, you can also make other pairings using other linking words and phrases, especially those used to express adversativity (see Unit One).

Although the author suggests that journal articles written in languages other than English may have limited impact, he fails to recognize that they may be important at the regional level.

The author suggests that journal articles written in languages other than English may have limited impact; *however*, he fails to recognize that they may be important at the regional level.

Despite the many interesting citations in support of his view, the citations are dated and are not likely meaningful today.

Now notice the italicized verb forms in these sample sentences.

The author *should have provided* more data about her sample.

Although this is an interesting and important paper, the authors *could have given* more attention to the fact that their model of consumer choice is based entirely on U.S. data.

Notice that *should* expresses a strongly negative comment, while *could* is less strong. *Should have* is a criticism, *could have* is more a suggestion, and *might have* is a weak suggestion. The use of *could* and *might* in unreal conditionals also reminds us that it is important to make your points with an appropriate amount of strength. Criticisms that are too strong and lack support will not help you position yourself, nor will evaluative comments that are expressed in too weak a manner.



Language Focus: Evaluative Language Revisited

As you already know, the different parts of speech can be used for evaluation.

Nouns:	<i>success</i>	<i>failure</i>
Verbs:	<i>succeed</i>	<i>fail</i>
Adjectives:	<i>successful</i>	<i>unsuccessful</i>
Adverbs:	<i>successfully</i>	<i>unsuccessfully</i>

For instance, you could write variations of these two claims.

Verbs

The article *succeeds in* demonstrating how bio-gas has improved daily life in Nepal.

The article *fails to* serve teachers who clearly need to make much more complex judgments about their students than the four stage model implies.

Adverbs

The article *successfully demonstrates* how bio-gas has improved daily life in Nepal.

Early papers *unsuccessfully attempted* to use cross-section distributions of accident counts to distinguish between true and spurious state dependence.

In this example, it seems that there may still be a possibility for revisions or improvements. However, in the case of a published paper, sentences such as this may appear in a literature review.

It would have been helpful if the authors had provided information about the patients who were screened, but not included in the study.

These types of sentences are sometimes called *contrary to fact* or *hypothetical conditionals*. In the second sentence, we can assume no possibility for revision exists.

TASK THIRTEEN

Consider these situations and comment on how they might have turned out differently. Use an unreal conditional. The first one has been done for you.

1. A bad presentation

My presentation would have been better if I had spent less time on basic concepts.

2. A bad grade on an examination or paper

3. A missed deadline

4. An unsuccessful meeting with an advisor or a committee

5. A rejected paper or conference proposal



Language Focus: Unreal Conditionals

Here are two additional examples of unreal conditional statements.

This article *would have been* more persuasive *if* the author *had related* the findings to previous work on the topic.

It *would have been* better *if* the authors *had given* their main findings in the form of a table.

Past Unreal Conditionals

Notice the structure of these conditionals:

noun phrase	modal + have	past participle	comparative expression	<i>if</i>	noun phrase	<i>had</i>	past participle	adverbial or complement
The images	would have	been	more informative	if	they	had	been	in color.
The resolution of the gel material	might have	changed		if	substantial Joule heating	had	occurred,	
The damage assessment	would have	been	more accurate	if	it	had	been done	immediately after the earthquake.

These conditionals refer to an unreal situation in the past. Past unreal conditionals are common in critiques because the texts being critiqued have already been put into final form—either published or turned in. There is no opportunity to revise the text in light of the criticism because the time frame is closed. Since these conditionals express something that is impossible or contrary to fact, linguists and philosophers often call them *counterfactuals*. In a critique, the *if* clause in the past unreal conditional often occurs second. Why is this so?

Present Unreal Conditionals

Present unreal conditionals, on the other hand, describe a hypothetical situation in the present. In these, the simple past tense forms are used. In a consultation with your writing instructor, you may have heard a sentence such as this.

Your paper *would be* stronger if you *included* some additional information.

TASK TWELVE

We want you to start thinking about what you could write in a critique of the excerpt from “The Increasing Dominance of Teams in the Production of Knowledge.” List three or four evaluative comments that you could make about the article. Discuss them with a partner. Keep in mind that you are not being asked to give your *opinion* on whether teamwork does in fact lead to better research and higher-quality papers. Focus on the article and the quality of the research, using your responses from Tasks Ten and Eleven as a guide.

In a critique, you may want to express criticism by saying what the author should have done but did not do. Here is one example of this.

This was a well-written review of current information, but the connection between nutrient stress, secondary compounds, and herbivory rates in wetland plants *could have received* greater coverage.

For the text on team or individual scholarship, you could make this observation.

The paper would have been somewhat more relevant, if the authors had used a better measure to determine authorship.

- _____ 5. “Research co-operation is certainly a necessary and positive phenomenon in the era of ‘big science’ but the notion of collaboration as a recipe for guaranteed success remains a myth.” (Glänzel, 2008)
 - _____ 6. “Collectivisation is typically associated with big-science projects and hence with big, expensive apparatus. Here the danger is that the team, or the apparatus, takes over priority (socially as well as epistemically) from the individual scientist.” (Kragh, 2001)
 - _____ 7. “When average productivity is plotted against mean cooperativeness, field specific patterns can usually be observed: Productivity increases first with co-operativeness until a field specific threshold is reached; beyond this level, correlation turns negative. This threshold value ranges depending on subject peculiarities from 1–2 in mathematics, over 3–4 in chemistry, to 5–6 co-authors in neurosciences and biomedical research.” (Glänzel and Schubert, 2004)
 - _____ 8. “The fact that a paper is less frequently cited or even still uncited several years after publication provides information about its reception but does not reveal anything about its quality or the standing of its author(s). Uncited papers by Nobel Prize winners may just serve as an example.” (Glänzel, 2008)
 - _____ 9. Self-citation has little impact on how important a paper is. (Glänzel, 2008)
-

While it is possible to evaluate an article without reference to other published work or course material, your evaluation may be improved if you consider the ideas or findings of others. To demonstrate, we now turn to Task Eleven.

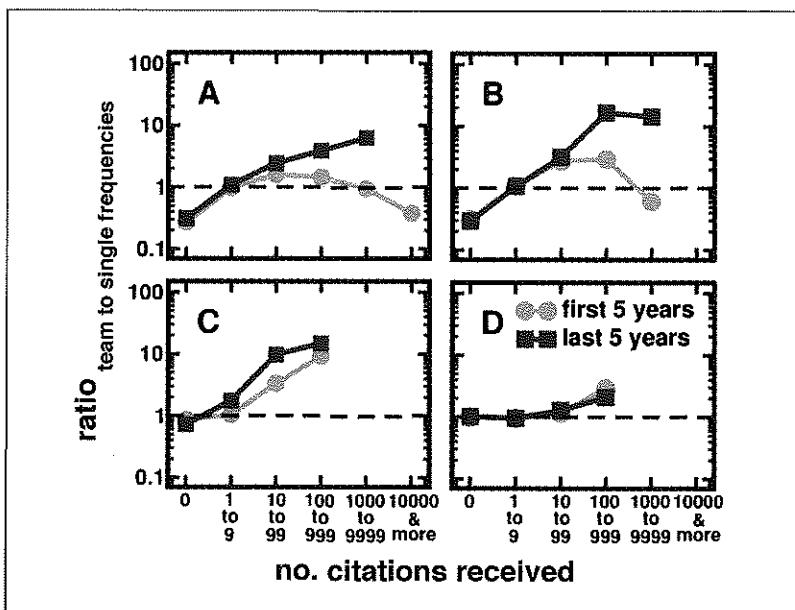
TASK ELEVEN

Now that you have read and analyzed the article on team and individual production of knowledge, consider the following opinions on the topic. As you read, mark each as reasonable (R) or unreasonable (U). If you are unsure, indicate this with a question mark (?). To what extent, if any, do some of these claims influence your opinion of the article? Is your opinion now more or less favorable?

- ____ 1. “Beyond individual interests and motivation of individual scientists, teamwork and scientific collaboration is one of the characteristics of ‘big science’ (Price, 1966). Of course, in inter- and cross-disciplinary areas, where scientists from different fields are jointly doing research, intensive collaboration is expected (see Glänzel et al., 2003).” (Glänzel et al., 2009)
- ____ 2. Cronin (2003) argues that in many science disciplines fraud and honorific authorship have become a matter of concern.
- ____ 3. “Suppressed, fraud, honorific, hyper-authorship or even ‘mandatory’ authorship, e.g., of supervisors’, questions the possibility of fixing the degree of the individual co-authors’ contribution to the paper (Cronin, 2001), and may raise the question: Co-authorship—who’s contributing?” (Glänzel, 2008)
- ____ 4. Research by Persson et al. (2004) revealed that the increase in the number of co-authors on papers is outpacing the growth in the number of publications indexed in the Science Citation Index (SCI) database. This expansion in co-authorship indicates that the network of collaboration is becoming more concentrated and co-authorship is gradually becoming more intense.

However, by the most recent period, a team-authored paper has a higher probability of being extremely highly cited. For example, a team-authored paper in science and engineering is currently 6.3 times more likely than a solo-authored paper to receive at least 1000 citations. Lastly, in arts and humanities and in patents, individuals were never more likely than teams to produce more-influential work. These patterns also hold when self-citations are removed (Fig. S5).

Figure 3. Exceptional Research



Pooling all publications and patents within the four research categories, we calculated frequency distributions of citations received. Separate distributions are calculated for single authors and for teams, and the ratio is plotted. A ratio greater than 1 indicates that a team-authored paper had a higher probability of producing the given range of citations than a solo-authored paper. Ratios are compared for the early period (first 5 years of available data) and late period (last 5 years of available data) for each research category, sciences and engineering (A), social sciences (B), arts and humanities (C), and patents (D).

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-25.7% in education), although even here teams currently have a large advantage in citations received (e.g., 67% more average citations in mathematics and 105% in education).

The citation advantage of teams has also been increasing with time when teams of fixed size are compared with solo authors. In science and engineering, for example, papers with two authors received 1.30 times more citations than solo authors in the 1950s but 1.74 times more citations in the 1990s. In general, this pattern prevails for comparisons between teams of any fixed size versus solo authors (Table S4).

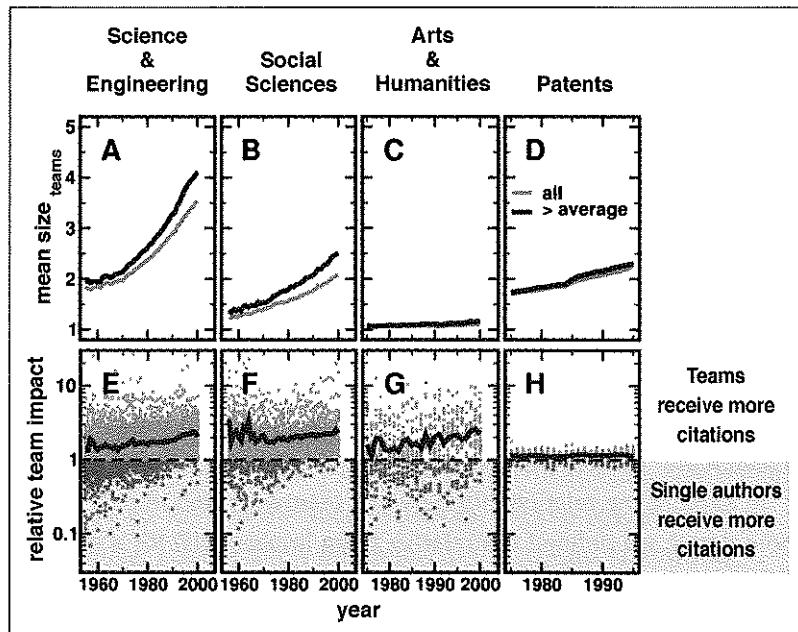
A possible challenge to the validity of these observations is the presence of self-citations, given that teams have opportunities to self-cite their work more frequently than a single author. To address this, we reran the analysis with all self-citations removed from the data set (21). We found that removing self-citations can produce modest decreases in the RTI measure in some fields; for example, RTIs fell from 3.10 to 2.87 in medicine and 2.30 to 2.13 in biology (Table S1). Thus, removing self-citations can reduce the RTI by 5 to 10%, but the relative citation advantage of teams remains essentially intact.

Because the progress of knowledge may be driven by a small number of key insights (22), we further test whether the most extraordinary concepts, results, and technologies are the province of solitary scientists or teams. Pooling all papers and patents within the four research areas, we calculated the frequency distribution of citations to solo-authored and team-authored work, comparing the first 5 years and last 5 years of our data. If these distributions overlap in their right-hand tails, then a solo-authored paper or patent is just as likely as a team-authored paper or patent to be extraordinarily highly cited.

Our results show that teams now dominate the top of the citation distribution in all four research domains (Fig. 3, A to D). In the early years, a solo author in science and engineering or the social sciences was more likely than a team to receive no citations, but a solo author was also more likely to garner the highest number of citations, that is, to have a paper that was singularly influential.

many citations as solo-authored papers in 1955 but 2.1 times the citations by 2000. Similar upward trends in relative team impact appear in sciences and engineering, social science, and arts and humanities and more weakly in patents, although the trend is still upward (20). During the early periods, solo authors received substantially more citations on average than teams in many subfields, especially within sciences and engineering (Fig. 2E) and social sciences (Fig. 2F).

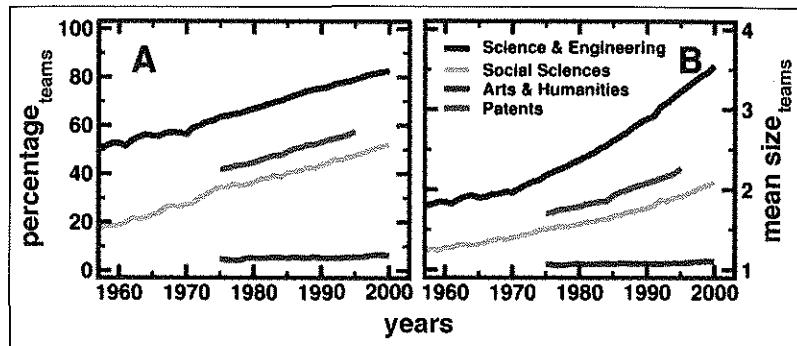
Figure 2. The Relative Impact of Teams



(A to D) Mean team size comparing all papers and patents with those that received more citations than average in the relevant subfield. (E to H) The RTI, which is the mean number of citations received by team-authored work divided by the mean number of citations received by solo-authored work. A ratio of 1 indicates that team- and solo-authored work have equivalent impact on average. Each point represents the RTI for a given subfield and year, whereas the black lines present the arithmetic average in a given year.

By the end of the period, however, there are almost no subfields in sciences and engineering and social sciences in which solo authors typically receive more citations than teams. Table S1 details RTIs for major individual research areas, indicating that teams currently have a nearly universal impact advantage. In a minority of cases, RTIs declined with time (e.g., -34.4% in mathematics and

Figure 1. The Growth of Teams



These plots present changes over time in the fraction of papers and patents written in teams (A) and in mean team size (B). Each line represents the arithmetic average taken over all subfields in each year.

conditions favoring teamwork in patenting are largely similar across subfields.

Our measure of impact was the number of citations each paper and patent receives, which has been shown to correlate with research quality (15–17) and is frequently used in promotion and funding reviews (18). Highly cited work was defined as receiving more than the mean number of citations for a given field and year (19). Teams produced more highly cited work in each broad area of research and at each point in time.

To explore the relationship between teamwork and impact in more detail, we defined the relative team impact (RTI) for a given time period and field. RTI is the mean number of citations received by team-authored work divided by the mean number of citations received by solo-authored work. A RTI greater than 1 indicates that teams produce more highly cited papers than solo authors and vice versa for RTI less than 1. When RTI is equal to 1, there is no difference in citation rates for team- and solo-authored papers. In our data set, the average RTI was greater than 1 at all points in time and in all broad research areas: sciences and engineering, social sciences, humanities, and patents. In other words, there is a broad tendency for teams to produce more highly cited work than individual authors. Further, RTI is rising with time. For example, in sciences and engineering, team-authored papers received 1.7 times as

Table 1. Patterns by Subfield

		Increasing Team Size		RTI >1 (with self-citations)		RTI >1 (with no self-citations)	
	N _{fields}	N _{fields}	%	N _{fields}	%	N _{fields}	%
Science and engineering	171	170	99.4	167	97.7	159	92.4
Social sciences	54	54	100.0	54	100.0	51	94.4
Arts and humanities	27	24	88.9	23	85.2	18	66.7
Patents	36	36	100	32	88.9	—	—

For the three broad ISI categories and for patents, we counted the number (N) and percentage (%) of subfields that show (i) larger team sizes in the last 5 years compared to the first 5 years and (ii) RTI measures larger than 1 in the last 5 years. We show RTI measures both with and without self-citations removed in calculating the citations received. Dash entries indicate data not applicable.

social sciences, 88.9% of the 27 subfields in the humanities, and 100% of the 36 subfields in patenting have seen increased teamwork.

Trends for individual fields are presented in Table S1. In the sciences, areas like medicine, biology, and physics have seen at least a doubling in mean team size over the 45-year period. Surprisingly, even mathematics, long thought the domain of the loner scientist and least dependent of the hard sciences on lab scale and capital-intensive equipment, showed a marked increase in the fraction of work done in teams, from 19% to 57%, with mean team size rising from 1.22 to 1.84. In the social sciences, psychology, economics, and political science show enormous shifts toward teamwork, sometimes doubling or tripling the propensity for teamwork. With regard to average team size, psychology, the closest of the social sciences to a lab science, has the highest growth (75.1%), whereas political science has the lowest (16.6%). As reflected in Fig. 1A, the humanities show lower growth rates in the fraction of publications done in teams, yet a tendency toward increased teamwork is still observed. All areas of patents showed a positive change in both the fraction of papers done by teams and the team size, with only small variations across the areas of patenting, suggesting that the

advantage has been increasing over time. Teams now also produce the exceptionally high-impact research, even where that distinction was once the domain of solo authors. These results are detailed for sciences and engineering, social sciences, arts and humanities, and patents, suggesting that the process of knowledge creation has fundamentally changed.

[First page omitted]

For science and engineering, social sciences, and patents, there has been a substantial shift toward collective research. In the sciences, team size has grown steadily each year and nearly doubled, from 1.9 to 3.5 authors per paper, over 45 years.

Shifts toward teamwork in science and engineering have been suggested to follow from the increasing scale, complexity, and costs of big science. Surprisingly then, we find an equally strong trend toward teamwork in the social sciences, where these drivers are much less notable. Although social scientists in 1955 wrote 17.5% of their papers in teams, by 2000 they wrote 51.5% of their papers in teams, an increase similar to that in sciences and engineering. Mean team size has also grown each year. On average, today's social sciences papers are written in pairs, with a continuing, positive trend toward larger teams. Unlike the other areas of research, single authors still produce over 90% of the papers in the arts and humanities. Nevertheless, there is a positive trend toward teams in arts and humanities ($P < 0.001$). Lastly, patents also show a rising dominance of teams. Although these data are on a shorter time scale (1975–2000), there was a similar annualized increase in the propensity for teamwork. Average team size has risen from 1.7 to 2.3 inventors per patent, with the positive trend toward larger teams continuing.

The generality of the shift to teamwork is captured in Table 1. In sciences and engineering, 99.4% of the 171 subfields have seen increased teamwork. Meanwhile, 100% of the 54 subfields in the

9. Does the research make an original contribution to the field? Why or why not?
10. If the evaluation is focused on a published article, why was the article chosen? Is the research consistent with material, best practices, and perspectives presented in class?

TASK TEN

Read this excerpt from a short communication entitled “The Increasing Dominance of Teams in Production of Knowledge” and analyze it using the questions provided on pages 249–250. Discuss your responses with a partner. Note that the definition of self-citation used in the paper is

... any citation where a common name exists in the authorship of both the cited and the citing papers. All citations were removed in which a citing and cited author's first initial and last name matched. This method can also eliminate citations where the authors are different people, but share the same name.

Also note that when figures or tables are designated with an S, they can be found in online supplemental materials. For this paper, the supplement contains Figs. S1 to S5, Tables S1 to S4, and References. Finally, if you want to know more about short communications, go to Unit Seven.

The Increasing Dominance of Teams in Production of Knowledge

Wuchty, S., Jones, B. F., and Uzzi, B. (18 May 2007).
Science, 316(5827), 1036–1038.

Abstract

We have used 19.9 million papers over 5 decades and 2.1 million patents to demonstrate that teams increasingly dominate solo authors in the production of knowledge. Research is increasingly done in teams across nearly all fields. Teams typically produce more frequently cited research than individuals do, and this

Having worked with many students on critique assignments, we have noticed that the articles students are asked to review often have a weakness that can be identified by reflecting on the course readings and lectures. For instance, if a course has emphasized the importance of a well-articulated plan for data collection, such as employing triangulation, the paper assigned for critique may lack such a plan. Thus, it is a good idea to consider what has been highlighted in your course and review the article with these highlights in mind.

If no evaluation criteria have been provided, then it is also important to have some general questions in mind to guide your thinking as you read and to form the foundation for critical inquiry (Dobson and Feak, 2001). We offer a few questions for you to consider as you read an article.

1. Who is the audience?
2. What is the purpose of the article?
3. What research questions or hypotheses are being addressed in the article? Are the questions relevant? (Stating the research questions or hypotheses as yes or no questions will help you identify the focus of a paper as well as evaluate the evidence and conclusions. In our experience, a question such as *Does herbal tea cause tooth decay* can be more useful in guiding your thinking than can a simple statement establishing the topic, as with *This paper is about herbal tea and tooth decay*.)
4. What conclusions does the author draw from the research? (Hint: Does the author answer yes or no to the research questions?)
5. What kind of evidence was collected to explore the research questions? Is there any evidence that could or should have been collected and included but was not? How good is the evidence? How well does the evidence support the conclusions?
6. Are the author's conclusions valid or plausible based on the evidence? Why or why not? How do the conclusions relate to what you have been learning in class? Are they consistent or inconsistent?
7. Are there any important assumptions underlying the article? How do these influence the conclusions?
8. Are the charts, tables, and figures clear? Do they contribute to or detract from the article?

1. Which of the ideas presented in the statements given in Task Eight (pages 244–245) are reflected in the review?
 2. The author used several quotes. Where in the paragraph are they placed? What is the connection between the quotes and the other information in the paragraph?
 3. Underline the evaluative language. How strongly are the opinions stated? Do you notice any instances of hedging? Do the language choices contribute to author positioning?
 4. How easy is it to distinguish what Stiglitz is saying from what the student is saying?
 5. Would you have given the review a top score?
 6. What do you think about beginning the text with the word *but*?
-

Evaluating a Published Article

Graduate students in the United States (and elsewhere) are often expected and encouraged to evaluate journal articles, sometimes as part of a journal club run by an instructor or advisor. While the word *critique* may not be used, students are asked to analyze, examine, or investigate, with the underlying assumption that students will do these activities with a critical eye. Writing an article critique may be somewhat easier than writing a book review, since an article usually centers around a narrow research question or problem. However, as with book reviews, they can still be particularly challenging to write because they require you to take on an “unfamiliar persona”—that of an authority of some kind (Dobson and Feak, 2001). Another similarity to book reviews is that what you choose to examine will largely depend on your discipline. In a field such as History, you might evaluate conclusions by critiquing the evidence used to support those conclusions. In Sociology, on the other hand, you may focus on the theoretical model employed in a study and the impact the model has on the conclusions. In Psychology, your critique may center on the instrument used to collect data, while in Engineering, you may notice that conclusions or explanations in a paper are not well supported and thus require further testing or more evidence. In writing a critique, it may help to know something about the author of the text, which can help you understand the perspective of the paper and perhaps the reason the article was chosen for evaluation.

it actually wants to aid. ②8 Until it reforms its ways away from disproved Washington Consensus policies, the IMF will hurt developing nations it ostensibly aims to help. ②9 Should the two organizations and the industrialized countries backing them fail to devote themselves to the developing world, they will increasingly face backlash and suffer from a lack of credibility.

③0 The World Bank and the IMF have great potential; they provide the framework necessary to humanely bring globalization to the world. ③1 Developing nations need the projects brought by the World Bank, and the stability supposedly provided by the IMF.

③2 The U.S., the EU, and the other countries controlling the two need to loosen their grip. ③3 If the pair would operate in a more egalitarian way, they would do a better job. ③4 This means opening governance to developing nations, granting them votes and a deserved say in any matter which affects them. ③5 The United Nations provides a good model overall, which the two could emulate. ③6 The World Bank's development strategies should come from within countries. ③7 The IMF should restructure its policies and economic models to reflect reality, not what works in a perfect world. ③8 While we should not eliminate the two organizations, fundamental changes must occur to ease globalization's pains.

③9 Stiglitz brings a strong perspective to the globalization debate, and makes valid points about the World Bank and the IMF's failings. ④0 They possess the power to lift people and nations from poverty, but currently they lack the leadership, independence, and policies to do so. ④1 The western powers which control them must recognize that they should support each country's unique strategy for dealing with and benefiting from globalization. ④2 If they fall short, one can hardly blame those hardest hit for pushing back unpredictably and violently against the two institutions and their western controllers, which have backed them into a corner.

power for good, though largely unrealized, makes them necessary, once improved, in today's world.

⑩ The World Bank opened after WWII to rebuild Europe, and the IMF to provide global financial stability. ⑪ With Europe's recovery from the war, the institutions turned to developing nations.

⑫ Today, Stiglitz says that "one (the World Bank) is devoted to eradicating poverty, the other (the IMF) to maintaining global stability" (23). ⑬ Both organizations ultimately answer to the western powers: the USA and the European Union. ⑭ As a result, the World Bank and IMF see the developing world through an industrialized lens. ⑮ Stiglitz repeatedly notes that though the duo intends to do good, they fall short because of their ties to the western governments and financial communities. ⑯ The author differentiates the two, writing that the IMF acts less transparently than the World Bank, and with an unflinching adherence to the Washington Consensus policies of the 1980s. ⑰ The sincere nature of the World Bank, in its mission to alleviate poverty, puts it ahead of the stubborn IMF in Stiglitz's view. ⑱ Both fall short in helping developing nations cope with globalization, but the World Bank less so.

⑲ "The problem is that the institutions have come to reflect the mind-sets of those to whom they are accountable" (216). ⑳ From this statement stem the problems with the World Bank and the IMF. ㉑ The World Bank's programs of education, community development, and infrastructural improvement point to its commitment to help the poorest countries. ㉒ In the end though, the head of the bank receives his/her appointment from the president of the U.S., which puts its goals ahead of those of the developing nations. ㉓ Until that organization focuses on poverty alleviation above all, it will continue to face scrutiny and fail in its service. ㉔ The more opaque IMF more forcefully imposes its will on the countries with which it works. ㉕ They receive money with many strings attached. ㉖ These conditions do not make sense, as seen repeatedly with the former Soviet nations and East Asian countries. ㉗ When compared to success stories like China, which avoided the IMF, one wonders who

- _____ 7. I should consider the date of publication and how this shapes my evaluation.
- _____ 8. I should discuss concepts that are surprising or different from what I have learned in my course.
- _____ 9. My review should identify the book I am reviewing and not assume that my readers (i.e., the professor or grader) have read it.
- _____ 10. (a consideration of your own) _____

This next task features a book review written by a student that appears in MICUSP.

TASK NINE

This review was written by a student in the interdisciplinary field of Natural Resources. After reading it, answer the questions on page 248.

The World Bank and IMF: Broken but Worth Fixing

① “But for millions of people globalization has not worked. ② Many have actually been made worse off” (Stiglitz, 248). ③ In *Globalization and its Discontents*, Stiglitz challenges the World Bank and the IMF, questioning their motives and their successes. ④ As a Nobel Prize winner and former chief economist of the World Bank, he shines a credible light on the institutions. ⑤ This makes his arguments powerful and enlightened. ⑥ He offers insightful suggestions on improving the organizations, so people everywhere can enjoy the attainable benefits globalization offers. ⑦ The World Bank and IMF started after WWII with different missions. ⑧ Currently they have similarities and differences, strengths and weaknesses, explained logically by Stiglitz so the reader can synthesize an opinion of their value today. ⑨ While the pair exhibit severe deficiencies, their

- ____ 9. "An additional strength is that the text approaches academic writing as needing to be effective, sophisticated, and clear, rather than focusing on the 'right' or 'wrong' way to express ideas in writing." (Smith, 2008)
 - ____ 10. "There are many sample texts from many fields ranging from Engineering to Psychology. This, however, could be a drawback since students may have difficulty understanding them." (Anonymous reviewer, 2010)
-

Book Reviews for Course Assignments

Much of what we have said about published book reviews so far, of course, would apply to the writing of a book review for a class. However, there will be some differences, some of which we would like you to consider in the next task.

TASK EIGHT

Discuss with a partner whether these statements should apply to a book review that you write for a course. Mark the statements as agree (A), disagree (D), or unsure (?).

- ____ 1. My review should provide some evidence that I can situate the book within ongoing discussions or debates or theoretical lineages in my field.
- ____ 2. My review should reveal that I can relate the focus of the book to the course material.
- ____ 3. My review should demonstrate that I can evaluate using criteria and language appropriate for my field.
- ____ 4. I should provide a summary of the book and of each chapter before beginning my evaluation.
- ____ 5. I should recommend whether others should read the book.
- ____ 6. I should write something about the author and take into account his or her status in the field.

TASK SEVEN

It is important to be fair when you critique. In this next task, examine some praise and criticisms of earlier editions of *Academic Writing for Graduate Students*. Consider which comments constitute praise, criticism, or neither. Discuss whether you think they are reasonable (R) or unreasonable (U) with a partner.

- 1. “Students who already have a good enough command of the written language often lack the time and patience to work systematically through a textbook of this kind.” (Breeze, 2005)
- 2. “Some teachers may question the wisdom of encouraging novices to begin the research paper at the Methods section [although other ESP specialists besides Swales and Feak, e.g., Jacoby, Leech and Holton (1995) do encourage the “Methods first” composing sequence].” (Belcher, 1995)
- 3. “It is surprising that the book does not begin with a more intellectually compelling perspective of academic writing such as MacDonald’s view of academic writing as a vehicle for constructing knowledge claims.” (Belcher, 1995)
- 4. “The book does not offer specific guidance for students in all fields.” (Chambers, 2008, personal communication)
- 5. “No book can offer everything a student needs; thus teachers should expect to deviate from and supplement it, as the Commentary recommends, and most of all to ‘negotiate the syllabus.’” (Reinhart, personal communication)
- 6. “The book is aimed at classrooms with students from different backgrounds who can then benefit from discussions of how academic writing conventions differ across disciplines.” (Conway, unpublished manuscript)
- 7. “Each chapter focuses on the various types of writing that one finds in some upper-level undergraduate classes and most graduate classes.” (Smith, 2008)
- 8. “I think the section on book reviews is good, but how many students actually have to write book reviews? The book covers so many topics that students actually need, so why spend time on a genre students do not need to produce?” (Anonymous reviewer, 2012)

TASK SIX

Find a published book review in a journal from your field. Bring it to class and be prepared to discuss such features as organization (as compared to that proposed by Motta-Roth), style, the nature of the praise and criticism, boosters, hedges, attitude markers, engagement markers, self-mentions, and evaluative language.



Language Focus: Evaluative Language

As you have seen in the sample texts, writing a good review requires an awareness of evaluative language. According to Hyland's 2004 study of 160 book reviews from eight disciplines (Cell Biology, Electrical Engineering, Mechanical Engineering, Physics, Marketing, Applied Linguistics, Philosophy, and Sociology), some evaluative terms cut across several disciplines, while others have preferred status in one or two. Here is a summary of his findings.

Frequently used evaluative adjectives *useful, important, interesting*
in all disciplines:

Frequently used evaluative nouns *clarity, accessibility*
in the "soft" fields:

Frequently used evaluative adjectives *detailed, up-to-date*
in the hard sciences:

On a more specific level, philosophers and applied linguists often described books as *detailed*, while philosophers and marketing specialists praised books for being *insightful* and *significant*. Books in Engineering were commended for being *comprehensive* and *practical*. Of course, not all evaluation is positive. For all fields the most common negative adjective was *difficult*. In the softer fields, books were criticized for being *inconsistent, restricted,* and *misleading*.

In our discussion so far, we have examined issues of content, organization, opinion giving, and evaluative language. Although there is more to be said on each of these topics and we will return to some later in the unit, at this point we believe you have sufficient background to attempt your own short book review. You have had experience in summary writing. You are familiar with the role and place of qualifications or hedges. In addition, you have a better sense of your instructor as your audience and are learning to present yourself in your writing as a junior member of your chosen discipline.

Finally, critical book reviewers insert themselves into their texts with some frequency. For instance, D'Angelo (2008) found an abundance of self-mentions in book reviews in Applied Linguistics, Law, Economics, and Medicine. Tse and Hyland (2006) also found frequent self-mentions in Philosophy and Biology, but fewer in Sociology. Self-mentions are not unexpected, if we consider that a book review is the outcome of a request for a personal opinion about a book.

I think that the discussion about institutions, cluster policies, and relations that bridge and connect clusters with external agents deserves more attention.

It seems to me that the book is more or less an overview of the authors' research plus other examples that are methodologically close to it.

In my opinion this book is the most comprehensive book written to date on the subject of corona from overhead transmission systems.

Table 16 shows the variation in the use of engagement markers, hedges, attitude markers, boosters, and self-mentions in three disciplines. As you can see, the differences do not appear to be as great as one might expect, suggesting some uniformity in book reviewing practices.

TABLE 16. Some Stylistic Features of Book Reviews in Philosophy, Sociology, and Biology per 1,000 words

Category	Philosophy	Sociology	Biology
Engagement markers	16.1	6.2	9.7
Hedges	11.2	9.4	8.4
Attitude markers	8.5	8.4	9.5
Boosters	8.5	6.7	6.8
Self-mentions	3.4	1.2	3.3
TOTAL	47.7	31.9	37.7

Tse and Hyland, 2006.

Boosters and hedges are common in book reviews and other evaluative genre as are other features such as markers of attitudes and engagement and self-mentions (Tse and Hyland, 2006). Authors can indicate their attitudes toward a proposition or idea by indicating surprise, disbelief, understanding, or “interestingness,” as shown in these examples.

It is surprising that a relatively small amount of doping (say 10% F doping for O) does not preserve the magnetic ordering.

With such vague and circular notions, *it is hard to accept* the author's later conclusions.

I understand that web development is a broad field and it is impossible to cover everything in one single book.

It is interesting to note that, at least to my knowledge, no such comprehensive book has ever been published.

Authors may also attempt to establish a connection with their readers and bring them into the text through the use of engagement markers. Engagement markers can take a variety of forms including personal pronouns (e.g., *we* and *you*), questions, commands, or directly addressing *the reader* or *readers*. Here are some examples.

If *you* are an experienced dc motor engineer, *you may* enjoy reading Chapter 6.

When *you* are looking for a reference work in econometrics that will be on *your* “frequently used” bookshelf for the next years to come, please *take* another pick.

The overlaps are not necessarily repetitions, but represent variations on a theme. *Take for example* the idea of “primary resistance” in Africa, which Mazrui returns to in a number of different meanings.

How are we to place Sachs's prescriptions for ending world poverty into the development economics literature?

Readers may be pleasantly surprised to note that the case examples, provided throughout the text, begin within the very first chapter.

³¹ Quantum field theory is a large subject that still has not reached its definitive form. ³² As such, there is room for many textbooks of complementary character. ³³ Zee states frankly, "It is not the purpose of this book to teach you to calculate cross sections for a living." ³⁴ Students can use other books to dot the i's. ³⁵ This one can help them love the subject and race to its frontier.

Michael E. Peskin
Stanford University

Classical and Quantum Gravity, 28, (2011), 089003.
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1. What is your reaction to this book review? Do you think it is objective?
 2. Is there any language in the review that you think might be useful in the writing of a book review in your field?
 3. If you were a student in Physics or Engineering, would you buy this book?
-



Language Focus: Stating Opinions

As we discussed in Unit Four, authors need to exercise good judgment when interpreting data and giving an opinion. The same is true when you are evaluating the scholarship of others in a published book review. Carefully chosen language can contribute to the reader's willingness to accept your claims. Recall that opinions can be softened (hedged); they can also be strengthened (boosted), as shown here.

Scientists and industrialists disagree about the health hazards of dioxins, the latter stating that the risks are exaggerated.

Hedged Scientists and industrialists disagree about the health hazards of dioxins, the latter stating that the risks *may be exaggerated*.

Boosted Scientists and industrialists disagree about the health hazards of dioxins, the latter stating that the risks *are clearly exaggerated*.

interactions but the electron does not, can it make sense that the charges of the proton and the electron are exactly equal and opposite? ¹⁴ The answer is yes, and also that this was the real point of the whole derivation.

¹⁵ The book takes on the full range of topics covered in typical graduate course in quantum field theory, and many additional topics: magnetic monopoles, solitons and topology, and applications to condensed matter systems including the Peierls instability and the quantum Hall fluid. ¹⁶ It is a large amount of territory to cover in a single volume. ¹⁷ Few derivations are more than one page long. ¹⁸ Those that fit in that space are very smooth, but others are too abbreviated to be fully comprehensible. ¹⁹ The prose that accompanies the derivations, though, is always enticing. ²⁰ Zee misses no opportunity to point out that an argument he gives opens the door to some deeper subject that he encourages the reader to explore. ²¹ I do warn students that it is easy to learn from this book how to talk quantum field theory without understanding it. ²² To avoid this pitfall, it is important (as Zee emphasizes) to fill in the steps of his arguments with hard calculation.

²³ One topic from which Zee does not restrain himself is the quantum theory of gravity. ²⁴ In the first hundred pages we find a 'concise introduction to curved spacetime' that includes a very pretty derivation of the Christoffel symbol from the geodesic equation. ²⁵ Toward the end of the book, there is a set of chapters devoted to the quantization of the gravitational field. ²⁶ The structure of the graviton propagator is worked out carefully. ²⁷ The van Dam-Veltman discontinuity between massless and massive spin 2 exchange is explained clearly. ²⁸ But after this Zee runs out of steam in presenting fully worked arguments. ²⁹ Still, there is room for more prose on connections to the great mysteries of the subject: the ultraviolet behavior, the cosmological constant, and the unification of forces. ³⁰ A new chapter added to the second edition discusses 'Is Einstein Gravity the Square of Yang-Mills Theory?' and suggests an affirmative answer, based on brand-new developments in perturbative quantum field theory.

TASK FIVE

Read this book review and underline any aspects that you think might be informal or not typical in a traditional research paper in your field. Discuss the questions on page 239. Do you think this review is typical of book reviews in Physics and Engineering? Why or why not?

Quantum Field Theory in a Nutshell (2nd edn)

Zee, Anthony. Princeton: Princeton University Press, 2010.
576 pp. US \$65, UK £44.95 (cloth) ISBN: 978-0-691-14034-6.

- ❶ Anthony Zee is not only a leading theoretical physicist but also an author of popular books on both physics and non-physics topics.
- ❷ I recommend especially 'Swallowing Clouds,' on Chinese cooking and its folklore. ❸ Thus, it is not surprising that his textbook has a unique flavor. ❹ Derivations end, not with 'QED' but with exclamation points. ❺ At the end of one argument, we read 'Vive Cauchy!'; in another 'the theorem practically exudes generality.' ❻ This is quantum field theory taught at the knee of an eccentric uncle; one who loves the grandeur of his subject, has a keen eye for a slick argument, and is eager to share his repertoire of anecdotes about Feynman, Fermi, and all of his heroes.
- ❼ A one-page section entitled 'Electric Charge' illustrates the depth and tone of the book. ❽ In the previous section, Zee has computed the Feynman diagram responsible for vacuum polarization, in which a photon converts briefly to a virtual electron-positron pair.
- ❾ In the first paragraph, he evaluates this expression, giving a concrete formula for the momentum-dependence of the electric charge, an important effect of quantum field theory. ❿ Next, he dismisses other possible diagrams that could affect the value of the electric charge. ❻ Most authors would give an explicit argument that these diagrams cancel, but for Zee it is more important to make the point that this result is expected and, from the right point of view, obvious. ❽ Finally, he discusses the implications for the relative size of the charges of the electron and the proton. ❾ If the magnitudes of charges are affected by interactions, and the proton has strong

7. Has the author attempted to soften any of her negative evaluative comments? (See the discussion in Unit Four on strength of claim.)
 8. In Sentence 17, the author writes, *If any criticism were to be leveled at the book it would be to note that. . .* This is an unreal conditional statement. Why do you think the author chose to introduce her criticism in this way?
 9. How would you explain the use of *would* in Sentence 16?
 10. The author does not use *I*, but instead focuses on an imagined reader (see Sentence 11) or readership (Sentence 14). What is the effect of this focus on readers? Could she have used *I*? Why or why not?
-

As with most written genres, there are disciplinary differences in published book reviews. Notable among these is the focus of the evaluative commentary. For instance, in Biology and Sociology, book reviewers tend to discuss such aspects as style, clarity, diagrams, and references—as if these are observable data (Tse and Hyland, 2006) and evidence to be scrutinized. In these fields, there is less of a tendency to create an argument for or against an opinion. In Philosophy, however, reviewers are more likely to extend their evaluation beyond the surface observations and to deal with the issues presented, thus creating an argument. These disciplinary differences in emphasis give rise to differences in stylistic choices, such as those having to do with how authors state their claims in an effort to persuade readers. Apart from disciplinary differences, you will also see that many book reviewers may adopt a somewhat more conversational and engaging style.

¹⁷ If any criticism were to be leveled at the book it would be to note that its coverage of traditional methods of evaluation is much stronger than coverage of the new. ¹⁸ Related to this point, it is a pity that more attention is not paid to research output and social media, especially in the light of the discussion of how and why new research domains emerge in new publication fora.

¹⁹ This book arms its readers with the right questions, for instance when they need to assess the value of the research of others, particularly when mediated by print and broadcast media.

²⁰ In this short text they learn how economic, political, or social self-interest may motivate the misreporting of findings into spin or, at the other end of the scale, fraudulent claims that can have devastating impacts on people's lives and their livelihoods.

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1. Does the review give the impression of being fair? Why or why not?
2. How serious do the cited weaknesses seem to be? How important do you think it is to cite weaknesses in what is by and large a good book? Is anything gained by doing so? (Consider "positioning," which was described in Unit One.)
3. The review consists of five short paragraphs. Explain the purpose of each. Use Motta-Roth's scheme, if possible.
4. Hyland (2004) concludes that praise is global but criticism is specific. Does this hold true for the review here?
5. Which of the sentences contain positive evaluation and which contain negative evaluation? Where do the criticisms appear? In the beginning, middle, end, or throughout? Does the author use different parts of speech in her evaluative comments?
6. What tenses are used in the review?

beyond their domain of expertise. ④ The focus falls on standard means of evaluating research output that will be familiar to active researchers, but perhaps not so well-understood by information professionals for whom research is not a part of their everyday role. ⑤ Another obvious target audience for the book is students.

⑥ The authors pay particular attention to the range of issues that can affect the validity of research output and the means of identifying when these are at play. ⑦ These include the initial source of funding for any project, the role of that source in setting up ideological biases in the work to be completed, and the influence of this on the interpretation of findings and on the findings per se. ⑧ The theoretical models that underpin the research domain and dominance of particular paradigms are also examined as lenses that can distort the research process and its outcomes. ⑨ Here reference is made to how studies are designed, for example, in terms of determination of research questions, the hypotheses investigated, and the field of study. ⑩ Choices for the dissemination of research findings also merit coverage, as do the economic and ideological systems that determine what is published. ⑪ Taking these factors together, the reader is reminded of the power of context in all research endeavors.

⑫ The real strength of the book is how the authors succeed in illustrating the main points made in the text with a series of interesting and engaging case studies. ⑬ These are drawn from a range of disciplines in the hard sciences, social sciences, and arts and humanities. ⑭ A general readership will be familiar with many of the cases cited, such as the Enron scandal and the debate over the long-term effects of hormone replacement therapy. ⑮ The recent case studies sit nicely alongside classic tales of the influence of external factors on the reporting of research by early scientists, such as Galileo's withdrawal of suggestions that the planets revolve around the sun following accusations of heresy. ⑯ In a teaching environment, these case studies would form the good basis for classroom discussions which, most likely, would lead into broader debates around the impact of research on aspects of our lives in general, such as our health and financial well-being.

This, of course, is not an exhaustive list of things “to do” in a book review but, rather, a suggestion of the aspects of a book that you can address. Typical topics for praise and criticism are the degree of originality, coherence of an argument, readability/style, extent or relevance of references, and even the author of the book under review (Hyland, 2004).

TASK THREE

Think about a book review that you might write (or have already written) for a class assignment. Are your aims the same as those identified by Motta-Roth? Why or why not? Alternatively, look at a book review from your own field. Compare the writer’s aims to those of Motta-Roth.

To examine book reviews in more detail, we first will examine published reviews and some related research, after which we turn our attention to book reviews as course assignments.

TASK FOUR

Read this book review published in the journal *Library & Information Science Research*, and discuss the questions on pages 235–236 with a partner. The book being reviewed deals with the value and evaluation of research.

***The Critical Assessment of Research:
Traditional and New Methods of Evaluation***

Bailin, Alan, and Grafstein, Ann. Oxford: Chandos Publishing, 2010.
121 pp. \$95.00 (pbk). ISBN: 978-1-84334-543-5.

- ❶ At just 99 pages, *The Critical Assessment of Research* fits well within a series of works that are targeted at the “busy information professional.” ❷ The text is tightly structured around the main theme of research assessment, scaffolded with a clear introduction and useful concluding summaries at the end of each chapter. ❸ In short, it discusses a number of strategies that non-specialists can deploy when considering the value of research output that reaches

General Aim

Introducing the book

by

Specifically Accomplishing that Aim

establishing the topic
and/or describing potential readership
and/or providing information about the authors
and/or making generalizations about the topic (see Unit Two)
and/or establishing the place of the book in the field

Outlining the book

by

highlighting the general organization of the book
and/or describing the content of each chapter or section
and/or referring specifically to non-text material such as graphs, tables, and appendices

Highlighting parts of the book

by

providing focused evaluation by making general, positive commentary
and/or offering specific, negative commentary

Providing final commentary and recommendations

by

commenting on price or production standards (good binding, paper quality, size)
and/or specifying the scope of the usefulness of the book
and/or recommending (or not recommending) the book, despite limitations, if any

- _____ 6. Members of your field regularly read book reviews.
 - _____ 7. Published book reviews may not only discuss issues of content, but other issues such as price or quality of production.
 - _____ 8. On occasion reviewers use the book under review as a springboard for their own points of view.
 - _____ 9. Book reviews may be written in a less formal style.
 - _____ 10. Book reviews generally do not contain references to previous literature.
-

Unlike book reviews written for a class assignment, published book reviews can be a “direct, public, and often critical encounter with a text and therefore its author, who must be considered as a primary audience for the review” (Hyland, 2004). Therefore, book reviewers must exercise some discretion when writing for publication. In addition, book reviewers should very carefully consider the broader journal audience, purpose, and strategy so as to display familiarity with the field, expertise, and intelligence. If the book review is for a course, your audience may be easily identified; in that case, your purpose and strategy will need to take into account the course content.

The writers of book reviews have a certain freedom in the content and organization of their reviews, because, in the end, they are expressions of their own perspective or position. Even so, most book reviews provide an overview of the content of the book under review, either by chapter or larger section; general and specific evaluation; a discussion of the relevance of the book to the field; and an endorsement (despite shortcomings). In her investigation of 60 published book reviews in Economics, Chemistry, and Linguistics, Motta-Roth (1998) proposed a schematic description of the elements in book reviews, which we have adapted and shown on page 232.

Book Reviews

In your discussion of Task One, you might have mentioned book reviews, a common critique assignment in the social sciences and humanities. In some fields, such as Sociology, students may be asked to critique books as often as every two weeks. This can be particularly hard for students who may not be fast readers. Although you may not need to review books as part of your degree program, book reviews can still help you gain an awareness of evaluative language as well as scholarly expectations and values of your field. Thus, we will begin our discussion of critique writing by taking a look at this genre, focusing only on academic book reviews as opposed to more general book reviews that might appear elsewhere.

Academic book reviews have been an important part of academia beginning in the 1700s (Salager-Meyer et al., 2007). Although early book reviews were once largely uncritical discussions of the content, they have evolved into a highly evaluative and conventionally structured genre, which plays a major role in the softer sciences and a somewhat less important role in the sciences.

TASK TWO

Discuss with a partner whether you agree (A), disagree (D), or are unsure (?).

- 1. Published academic book reviews are usually strongly negative.
- 2. Book reviews should start with a summary of the book.
- 3. The judgments expressed in a published book review could have career consequences.
- 4. Published book reviews may be somewhat threatening for the author of the book being reviewed.
- 5. Book reviews can be a good first publication for a graduate student or junior faculty member trying to build a publication record.

to be, psychology is not comparable to physics. Or, in terms of the expected size of a sample group, the standards for research on language teaching methodology are not the same as those for efforts to measure elementary school reading ability. The question of how "fair" criticism varies from one field to another is an issue that we will return to later.

We should also note at this stage that different fields are likely to impose different emphases on critiques. In the humanities, attention may focus on how “interesting” the arguments are; in the social sciences, on the methodology; and in the sciences and Engineering, on the results and what they might (or might not) imply for the real world. The final point we want to make is that we have restricted this unit to the critiquing of written work. We know that students are sometimes asked to write critiques of other things: paintings, music, films, famous buildings, and so on. Critiques of works of art require special training and special writing conventions that lie beyond the scope of this book.

TASK ONE

Discuss with a partner the kinds critiques of written texts that are common in your field. What are some of the main challenges junior scholars face when evaluating the written work of others?

Unit Six

Writing Critiques

In this unit, we extend the work begun in Unit Five to the writing of critiques. *Critique* is a French word that means “a critical assessment” (positive, negative, or a mixture of both). Some common types of critique that you may be familiar with are film reviews in the popular press or book reviews in journals. Critiques may have various structures, but the simplest is a short summary followed by an evaluation. This unit will concentrate on the evaluation portion.

In our experience, critique assignments are employed somewhat variously in U.S. graduate programs. Certain instructors—from a wide range of programs—use them on a regular basis; certain others almost never do. In some fields, critiques are a regular part of take-home examinations; in other fields, they rarely are. Instructors may assign critiques

1. to ensure that students actually do reading assignments.
2. to assess the students’ understanding.
3. to help students develop habits of analytical reading.
4. to train students to integrate lecture material and the assigned reading with other readings they have done, especially by making comparisons.
5. to give students a better sense of the scholarly expectations in their chosen field.

The first four purposes are similar to those we have already seen for summaries. The fifth is somewhat different. Summaries focus on an accurate recasting of some content of an original source. Critiques require that students also learn to express their evaluative comments within their field’s accepted standards of judgment. It is important that critiques be “fair and reasonable.” Part of being “fair” means that criteria that are reasonable in one field should not necessarily be applied to another field where they might be unreasonable. For example, in terms of how precise a measurement needs