Revising for reader ease 2: transitions

Key points:

- Conventional transition words and phrases often don’t adequately prepare the reader for the content of a sentence.
- Transitions should indicate the relationship of the sentence to the one before it or to the paragraph.
- Improving transitions and relating new information to previously discussed information complement each other.
  - Transitions’ advantage: explicitly convey author’s logic.
  - Relating information’s advantage: structure matches story, makes info appear when it matters.
  - Indicating each type of relationship helps identify where to explain the other.
- Which transition is best depends on the sentence.
  - Content—more complex relationships require more complex transitions.
  - Structure—whether changing the grammatical subject works or not.

When you hear the word “transition,” you might think of introductory words like “however” and “therefore.” These words can help to smooth the break between sentences, but as the following paragraph shows, they’re not always the best way to do that:

**Example 1 version 1:** occasional transition words aren’t enough

To further explore mRNA transport dynamics, maintenance mechanisms and localization machinery, observation of mRNA in live tissue is required. One of the biggest challenges to performing live cell imaging is how to label the RNA in the living cell. Some of the first attempts to image RNA in living cells relied on feeding cells fluorescent labeled metabolites that are subsequently incorporated into transcripts. However, this method is unsuitable for the detection of specific transcripts. Labeling individual species of transcripts can be achieved by first incorporating amino-allyl nucleotides during synthesis of RNA in vitro and subsequent chemical coupling to fluorescent derivatives. The resulting fluorescently labeled RNA can be introduced into living cells by microinjection. In *Xenopus*, injections into oocytes have been a key assay for elucidating the mechanism of Vg1 mRNA localization. Similarly, in *Drosophila*, RNA labeled in this way was used to show that oskar mRNA can at least partly localize if injected near its final destination at the posterior of the oocyte and in the embryo, microinjection of pair-rule transcripts has been used to study the mechanism of localization.


This paragraph’s transition words don’t quite prepare the reader for the content of the sentences they introduce. For example, “however” only indicates that the sentence will either disagree with the previous one or describe something that happens in spite of what the previous one said. We have a vague sense of what’s
coming, but can only determine the purpose of the sentence by reading and interpreting it. The other transition word in the paragraph, “similarly,” has an analogous effect—it indicates that whatever’s coming is somehow like what was in the previous sentence, but the reader might still be surprised that the sentence begins with “in Drosophila,” since that’s not very similar to Xenopus.

**Transitions indicate relationships among sentences**

An effective transition would more accurately indicate where the paragraph is going so that the content of the sentence fulfills the reader’s expectations. You might wonder how you could guide the reader to expect what’s in the sentence without telling them exactly what you’re going to say. A simple solution is to indicate the relationship of the sentence to the previous one. To generate transitions that do this for our example, let’s first list the relationships for each sentence:

<table>
<thead>
<tr>
<th>Example 1 analysis: relationships between sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Goal of methods described in this section</td>
</tr>
<tr>
<td>2. Challenge to reaching goal (already in text—no need to revise)</td>
</tr>
<tr>
<td>3. Solution to challenge</td>
</tr>
<tr>
<td>4. Drawback of solution</td>
</tr>
<tr>
<td>5. Method without this drawback</td>
</tr>
<tr>
<td>6. Later step in method—way that this is more challenging than previous method</td>
</tr>
<tr>
<td>7. Application of method and its result</td>
</tr>
<tr>
<td>8. Another application in a different system</td>
</tr>
</tbody>
</table>

This would be even easier for something you wrote, since you wouldn’t have to guess from cues like “challenge” and “unsuitable” to determine the relationships. We can use these notes to craft transitions:

**Example 2 version 2: adding transitions that explain relationships**

To further explore mRNA transport dynamics, maintenance mechanisms and localization machinery, observation of mRNA in live tissue is required. ²One of the biggest challenges to performing live cell imaging of mRNA is labeling the RNA in the living cell. ³Early solutions to this challenge relied on feeding cells fluorescent labeled metabolites that are subsequently incorporated into transcripts [25]. However, this method has a major limitation: it is unsuitable for the detection of specific transcripts. ⁴An approach without this limitation involves first incorporating amino-allyl nucleotides during synthesis of RNA in vitro and subsequent chemical coupling to fluorescent derivatives. ⁵Labeling RNA this way requires an additional step to introduce the fluorescent RNA into living cells—microinjection. ⁶An application of this method in Xenopus oocytes helped elucidate the mechanism of Vg1 mRNA localization [26,27]. ⁷It has also been used in another model system, Drosophila, to show that oskar (osk) mRNA can at least partly localize if injected near its final destination at the posterior of the oocyte [28] and that in the embryo, microinjection of pair-rule transcripts has been used to study the mechanism of localization [29].
Revising the beginnings of sentences this way makes the paragraph easier to follow in multiple related ways. Since many of the transitions include the same terms, adding them to the text increases the number of references back, which better shows the relatedness of each sentence to the previous one. Increasing this number might seem gratuitous, since many sentences already repeated previously used terms (“living cells,” “this method,” etc.). However, these repetitions are less informative than the transitions we added because they merely suggest a connection rather than stating what it is. Stating this connection helps the reader understand the paragraph as a whole, since it informs her of the author’s logic—the reason the sentence is in the paragraph. This reason will help the reader see why (and decide whether) she should read it or remember it.

→ Including transitions that explain relationships between sentences help the reader see your logic

Transitions and relating information complement each other
If you read the other lesson on reader ease, you might notice the similarities between this revision and that in the previous lesson: both of them increase the number of pronouns (“this,” “these,” “it”) at the beginnings of sentences. Further, both approaches focus on improving the clarity of relationships, either among sentences or among the information in the sentences. These might seem to be the same thing; revising the order of information and the transitions might appear to be redundant. However, the relationship between information in adjacent sentences may not have all that much to do with the author’s logic. For example, in the paragraph we revised, the fourth sentence (“However, this method is unsuitable for the detection of specific transcripts”) refers to information in the previous sentence, but doesn’t indicate why we need to know about the lack of specificity. Our revision made clear that this is a negative attribute of the method, and gave us a way to relate the next sentence about in vitro labeling back to this one. Thus, combining both methods of revision will make your writing easier to follow than if you focus only on putting the information in logical order.

→ Including transitions helps the reader in different ways than relating new terms to those already used

Conversely, logical ordering of information ensures that the structure of the sentences matches the progression of the story (i.e., that the subjects are what the story’s about). To illustrate this advantage, let’s add transitions (in italics) to the original example from the previous lesson:

Example 2: adding transitions when new terms are subjects of sentences

<table>
<thead>
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<tr>
<td>Over the past few years, candidate cancer stem cells have been identified in a variety of human malignancies including leukemias and a number of solid tumors such as glioblastomas, medulloblastomas and carcinomas [11]–[24]. Of the carcinomas, breast cancer is the first human type for which a putative cancer stem cell subpopulation has been isolated [25]. To isolate these cells, Al Hajj and colleagues used in vitro-separated tumorigenic cells from</td>
</tr>
</tbody>
</table>
This revision demonstrates the limitations of simply adding transitions to writing that’s difficult to follow—while it does make most of the paragraph read more smoothly, there are still some unexpected pieces. For example, why the author describes the cells’ expression of surface markers remains obscure until the end of the paragraph. The transition in that sentence only addresses the purpose of the in vitro separation, not the cells’ characterization; a transition for both would be difficult since the ideas are so independent. The transition that explains the relevance of the markers is that in the last sentence, which suggests that this is the logical place for such information to appear first. Further, it’s unclear how “mammosphere” relates to the story despite our addition of a transition to the sentence—this is only explained in a separate sentence giving its definition. We didn’t add a transition to that sentence since it doesn’t serve the paragraph directly; it serves the previous sentence. That no transition would work for this sentence highlights the misplacement of “mammosphere” in the previous sentence.

→ Adding transitions reveals where to revise the order of information

Which transition is best depends on the sentence
These examples have shown that adding transitions isn’t redundant with rearranging the order of information in your writing, but you might still find the suggestion given here for composing transitions (explaining the logical relationship of the sentence to the previous one or the paragraph) difficult to follow. This guideline may seem open-ended or loose; there are likely many ways to explain each relationship between sentences, so it might appear challenging to know whether your transition is the right one. However, as in all aspects of writing, there isn’t only one “right” way to transition; what you choose depends on your personal style—what sounds appropriate within the text you’ve written.

→ No right way to transition—do what works for your style

Which transition works best also depends on the sentence itself: its content and structure. The more complex the relationship between the sentence and the previous
one, the more complex the transition will need to be. For example, if all the sentence
does is provide a detail or instance of the general thing in the previous one, you can use
a simple, standard phrase like “for example.” In contrast, if the relationship is less
direct, like support for something not explicitly mentioned in the previous sentence, you
might need a clause that composes half the sentence, like that in the fourth sentence of
the previous example (“Evidence that these cells...”). Another possible way to compose
the transition for that sentence would be as an introductory phrase, like “to show that
these cells were cancer stem cells,” but this would require changing the subject of the
sentence to “Al Hajj and colleagues” or “the researchers,” which would shift the topic of
the story from the cells to the experimenters. Thus, whether you use a phrase or a
clause depends on what you want the subject of the sentence to be.

→ Complex relationships need complex transitions (phrases or clauses)
→ Clause makes the transition the subject—emphasizes the connection more

This adaptability is the advantage of the explanatory approach to transitions—
 prescriptive guidelines might not be as effective in helping the reader understand your
logic. Remembering that helping the reader follow your writing is the purpose of
transitions should help make composing and revising them seem more doable, since
more explanation of the connections between sentences will always be helpful.