Mapping: Methods & Tips

Creating Graphically Complex Indexes With InDesign

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When Hedberg Maps created the first edition of our *Baseball TravelMap* in 1998, we wanted a graphically complex, annotated index. Working in Quark Xpress, we created type and character styles that allowed us to adjust leading to make the index fit as its leagues expanded and contracted. Using parent-child relationships within styles, we made one change to a parent style and so automatically made the same adjustments to related styles.

We almost never dared to reflow the entire index. The data for the index was maintained in a separate relational database. Because resetting all the headers, subheaders, and body text—line by line—was so much work, we just made line edits to the Quark file and then proofed them against the database. It was time-consuming and frustrating.

Then came Adobe InDesign CS[1], which opened a new world of annotated, graphically rich indexes. As a way to transform data into complex text layouts, InDesign was the tool Hedberg Maps had been waiting for. By using nested styles, InDesign allowed us to create paragraph styles with different "substyles" for different parts of the paragraph, and it allowed us to attach styles to index data using tagged text as it came out of the database.

InDesign Text Formatting and Styles

InDesign has two fundamental types of text formatting: character formatting and paragraph formatting. The difference between the two is self-evident: Character formatting covers characteristics like font, size, color, kerning, baseline adjustment, and compression that can be applied one character at a time; paragraph formatting includes components like indents, spacing, leading.

Users can generate styles based on each type of formatting: Paragraph and character styles each have their own palettes. Characteristics of the different character and paragraph style palettes overlap, as paragraph *styles* can include character-level *formatting* such as font, size, and color. Where both a paragraph and a character style apply, the character style generally overrides the paragraph style, and, in both cases,

styles can be and are overridden by manually applied formatting. An easy way to think of the relationship between paragraph and character styles is that paragraph styles offer a default character style within a given paragraph, and character styles offer either building blocks to develop paragraph styles or an overriding style that can be applied manually within paragraphs where desired.

Competing systems of formatting can become very confusing. It is best, especially when working with complexly formatted text, to stick to formatting text using styles only (i.e., do not go applying italics manually—create an italic style and apply *that*). Be clear in your mind about how and where you are using character and paragraph styles.

Nested Styles

For the *Baseball TravelMap*, we had used carriage returns in Quark to separate header and body in our index. Each had its own paragraph style. For example, Figure 1 shows two separate paragraphs in Quark. However, the data used to generate this index is exported from the database as a single unit.

Figure 1. Two separate paragraphs appearing in Quark. (see page 66 for color version)

In InDesign, this is a single paragraph. While it is not difficult to put a replacement character (we use $, %, †, #, or any ASCII character not used in the index content) in the data export calculation and then make a global find-and-replace to a carriage return in Quark or InDesign, you then need to apply alternating styles to header and body, over and over. By using forced line breaks instead and applying one common paragraph style, we can save ourselves this entry-by-entry alternation.

The trick in InDesign is to use "nested styles," a feature of paragraph styles. They allow you to specify which character style will be applied to different sections within a paragraph, beginning and ending with specific delimiters. You can specify any character or type of break as a delimiter, and you can specify a count (for example, change character styles after the third instance of a semicolon). See Figure 2 for the nested styles dialog box.
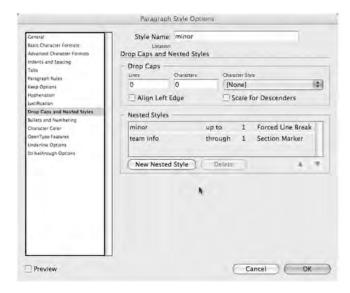
Figure 2. InDesign's nested styles dialog box. (see page 66 for color version.)

In our InDesign document, we would define (1) a character style called "minor league head" for the opening line, (2) a character style called "team body ital" for the italicized name of the major league team affiliation, and (3) a character style called "team body plain" for the remainder of the entry. We would then define a paragraph style called "minor." Within it, we would define nested styles (see figure 2), with "minor league head" delimited by a forced line break and "team body italic" delimited by a "]." We then could either fall back on a default paragraph style which mirrors the character style "team body plain" or add an additional nested style with an end delimiter that does not appear in the paragraph (as in the section break shown here).

I recommend using named character styles nested for the entire paragraph for one simple reason: leading. If you want to readjust an index for fit as the index shrinks or expands, the easiest way is to adjust leading. You will want this to be consistent throughout, and if you have some text that is being governed by paragraph styles and some being governed by character styles, chaos will ensue. If you set character styles' "parent" to a single character style and then adjust all of them by adjusting the parent style, your life will be easier. One caveat: Sometimes it seems as if whichever leading value is smaller between paragraph and character gets to be the trump, so it may help to keep the main paragraph leading value ridiculously small.

There is an invisible "end nested style" character available in InDesign, and this is useful if there is no obvious consistent key character (tab, line break, parenthesis) that can be used universally to signal a style change, or if that data field may or may not appear in

any given entry. If, for example, you wanted to put in italics any information about new stadiums, which would not be applicable to all minor league teams, you could create a nested style activated and/or deactivated by an "end nested style" marker. In the database export, your substitution character would always be present, but when the end nested style marker is substituted in InDesign, these characters would either surround applicable text, or would appear immediately adjacent to one another and so would "cancel out" each other.

I hope it is apparent how powerful this feature is: You can use it to insert symbols in a different font and/or color (for example, see the index sample from Hedberg Maps' *Minnesota SuperMap*, figure 3). You can use it to generate sub-entries. (In the case of the *Baseball TravelMap*, we used it to put major league team home stadiums and spring training in the same paragraph but with line breaks and styling that make them *look* like distinct paragraphs. See figure 4).

Figure 3. Example indexing from Minnesota SuperMap *showing the insertion of different fonts and colors. (see page 66 for color version)*

Figure 4. Example indexing from Baseball TravelMap *showing line breaks and styling. (see page 66 for color version)*

Tagged Text

A second tool to automate styling text is tagged text. The idea of tagged text should be familiar to anyone who has used HTML tagging (<i>, </i>, etc.), and the theory is very much the same. All of InDesign's text formatting can be expressed in tags, and text can be imported with those tags in place, essentially doing all the formatting for you.

The easiest way to see how things should be tagged in your data application is to style a piece of text in the way you want it, and then, with the text selected, go to "Export" in the file menu, where "InDesign Tagged Text" is one of the export options (note this is not an option if only the text block is selected)

A few basic tags will get you started:
- Paragraph styles are denoted as pstyle:*stylename*>; in this case <pstyle:minor>.
- Character styles are denoted as <cstyle:*stylename*>. You can place <cstyle:> where you wish it to return to no character style.
- A "no break" range of text (for example a phone number or a web site) is <cnb:1> with <cnb:> at the end.
- A full range of tags is spelled out in the Adobe document "Adobe InDesign Tagged Text" available as a PDF at http://tinyurl.com/tagtext.

Note that unlike HTML, colons instead of equals signs are used, and no quotes are needed in stating the value of a tag. I have used abbreviated tags here, but there are verbose versions of all tags; in these three cases they are <ParaStyle>, <CharStyle>, and <cNoBreak>

In the *Baseball TravelMap* example above, the tagged text for this entry would look like:

    <pstyle:minor>Savannah (GA) Sand Gnats
    G4<0x000A>[Mets] Grayson Stadium. <cnb:1>912-
    351-9150<cnb:>. <cnb:1>www.sandgnats.
    com<cnb:>

Note that the tab is not indicated by a special character, but the forced line break is ("<0x000A>"). Note also the placement of "no break" markers to keep phone numbers and web addresses from breaking across lines.

You must know three important things to make importing tagged text work properly:
- Be sure your text is truly plain text. Word formatting, RTF formatting, and other kinds of styling are likely to mess you up.
- The basic type of text formatting in your import needs to be indicated as the top line of the tagged text to be imported. For Windows, this will probably be <ASCII-WIN> unless you are using a different encoding system like Unicode. For Macintosh, it will be <ASCII-MAC>. I gen-

erally open the text exported from the database in a plain text editor and insert the line and resave before importing into InDesign
- On import, you need to be sure that your default paragraph and character styles are set to the default values. You can check this by deselecting everything and seeing which character and paragraph styles are indicated in the paragraph style and character style palettes. Adjust as needed.

Combining the two

Where to use tags and where to use nesting styles is really a judgment call based on how the index is structured. In the *Baseball TravelMap*, we have multiple different paragraph styles which incorporate nested character styles—for major league teams, minor league teams, independent league teams, etc. In this case we use tagged text to indicate paragraph styles and to prevent phone numbers and URLs from breaking. In an index with only one style (and no phone or Web information), we might dispense with this and just use nested styles.

My suggestion is to experiment! Put together with a decent database, these two aspects of InDesign can open up all sorts of possibilities in index design, making your indexes as information-rich as the cartographic elements of your map publication.

Notes

1. The techniques in this article work in Adobe InDesign CS, CS2, CS3, and presumably CS4, although they have not been tested in this most recent release.

References

My main source for learning about tagged text and nested styles is Olav Martin Kvern and David Blatner's *Real World Adobe InDesign*. I still use *Real World Adobe InDesign CS* from 2004, but *Real World Adobe InDesign CS4* is now available. .

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Nat Case is head of production and co-founder of Hedberg Maps in Minneapolis. This article is based on a presentation made at the 2005 NACIS Practical Cartography Day.