

# Example Chapter: Contributing to the Collective Cognition Workshop Volume

## **James P. Crutchfield and Cosma Shalizi**

Santa Fe Institute  
1399 Hyde Park Road  
Santa Fe, New Mexico 87501-8943  
{chaos,shalizi}@santafe.edu

## **Kagan Tumer and David Wolpert**

NASA Ames Research Center  
Mailstop 269-2  
Moffett Field, California 94035-1000  
{kagan,dhw}@email.arc.nasa.gov

The abstract should be concise: stating the problem, hinting at its general relevance, and summarizing the results. Limit yourself to about 300 words.

## **1 INTRODUCTION**

These are the instructions outlining how to prepare your manuscript for the *Collective Cognition* workshop volume. Proceedings of the Santa Fe Institute (SFI) are published under contract with **Oxford University Press** as part of the SFI's *Studies in the Sciences of Complexity* series. To ensure timely distribution of proceedings volumes, we need your help.

### **1.1 AUDIENCE**

The editors intend to make *Collective Cognition* comprehensive and accessible, given the particular range of topics covered at the workshop and given the participants' areas of expertise. To this end, the introductory sections of your manuscript should attempt to give (i) a broad, but concise picture of the topics it addresses, (ii) summaries of the central motivations and questions,

**Collective Cognition—Mathematical Foundations of Distributed Intelligence**  
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and (iii) background citations so that interested researchers can use them to develop a working appreciation of your area.

In a complementary fashion, in the concluding sections we would like authors to give their view of future directions for their work and also for collective cognition and, especially, to suggest how to make contact with other fields. One helpful way to do this is to distill a few open questions. Perhaps these are ones that you think you need help on from allied fields or from novel experiments.

In short, we would like you to think of *Collective Cognition* as a resource. So, what kinds of information would *you* like to see included? At a minimum, include these in your own manuscript. Feel free to suggest to the editors areas or topics whose coverage would complement your contribution or help the volume be more self-contained.

As for the general tone, remember that your audience is a varied multidisciplinary group, ranging from scientific researchers in your field and in other sciences of complexity to graduate students. You will recall that researchers from a wide range of fields attended the workshop: from software engineering to sociology, from economics to physics and computer science. Thus, be sure to define terms that are not well understood outside your discipline and to provide complete and extensive references for further reading.

Please do not use abbreviations in the chapter unless you define them when they are introduced. Do not provide a key to abbreviations at the end of your chapter.

### 1.2 CONTACTS

You can keep up to date on the workshop volume by going to the Workshop's web site at <http://www.santafe.edu/~dynlearn/colcog>. Or you can contact Jim Crutchfield via email at [chaos@santafe.edu](mailto:chaos@santafe.edu) or Cosma Shalizi at [shalizi@santafe.edu](mailto:shalizi@santafe.edu). Questions about chapter content and due dates should be directed to these editors.

Questions about figures, instructions, or publication should be referred to Della Ulibarri ([dlu@santafe.edu](mailto:dlu@santafe.edu)) of SFI's Publications Office.

### 1.3 STEPS TO CONTRIBUTING

The first step is to submit a manuscript for review to Cosma Shalizi ([shalizi@santafe.edu](mailto:shalizi@santafe.edu)). (See below for preferred formats.) The editors will then send out the manuscript to referees for comments. The second step will be to make revisions, if necessary, and then to submit your manuscript to SFI's Publications Office. The last step will be proofreading the final copy that Publications sends you and promptly returning it.

## 2 MEDIA

For the first review phase please submit a copy of your manuscript in PostScript (i.e., a printer file) or PDF via electronic media (electronic mail, on your web site, or CDROM) to Cosma Shalizi (shalizi@santafe.edu). Electronic mail and web site retrieval are much preferred. For the latter you can simply email or send the document's URL.

If the file is large, then you can compress it using “gzip” or similar compression utility. If you are submitting the compressed file by email, use “uuencode” (or similar) to convert it to an email-robust format before sending.

If none of these electronic media are possible, then we can work with paper hardcopy, except for figures.

Once the manuscript has been accepted for inclusion in the volume and is ready for final submission, please provide an electronic version to SFI's Publications Office. (See Table 1 for addresses.) In order of preference, these types of media can be submitted:

1. On your website: Simply send the URL(s) to dlu@santafe.edu,
2. Electronic mail to: dlu@santafe.edu,
3. CDROM, or
4. Zip disk.

If you have questions about media, please contact Della Ulibarri (dlu@santafe.edu). If you are unable to provide electronic media, please provide two copies of your chapter, one that is a high-quality, laser-printed original and one that is marked with any changes, indexing terms, and notes to SFI's production staff.

## 3 FORMATTING

### 3.1 SFI L<sup>A</sup>T<sub>E</sub>X

SFI's Publications Office is responsible for producing the camera-ready copy, not **Oxford University Press**. In final form, the book will be done in L<sup>A</sup>T<sub>E</sub>X2e software. If at all possible, please format your manuscript in L<sup>A</sup>T<sub>E</sub>X, using the formatting and macros for this document. We will put portions of the volume on the workshop's web site. This will increase the work's visibility and accessibility. Thus, since electronic formatting will help with this, it has several advantages.

The basic set of files required to produce this example chapter consists of

1. ColCogChapter.tex: this is what you will modify to become your chapter;
2. colcog.bib: example bibliography file for BibT<sub>E</sub>X,
3. Figure.eps: an example figure;
4. sicolcog.tex: macros specific to the workshop volume;

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5. sfi10.clo: SFI font configuration; and
6. sfibook.cls: SFI proceedings volume macros.
7. sfi.bst: SFI proceedings bibliography format.

These files listed are available via the workshop's web site, mentioned above. Go to the Proceedings page there to transfer the files to your local computer.

This example chapter is intended to include examples of most formatting constructs you will need. Using this formatting will produce a manuscript in the form in which it will appear in the volume.

If you are a marginal L<sup>A</sup>T<sub>E</sub>X user, use whatever L<sup>A</sup>T<sub>E</sub>X format you are comfortable with and we will convert it.

Your help with properly formatting your chapter will greatly speed up the volume's publication.

When using L<sup>A</sup>T<sub>E</sub>X, please note that SFI's preferred fonts may not be available on your system. You may need to change the font configuration to match how the fonts are defined on your system, or you can substitute fonts. Generally, problems arise only with the titles and section headings.

### 3.2 ALTERNATIVES TO L<sup>A</sup>T<sub>E</sub>X

If you do not use any form of L<sup>A</sup>T<sub>E</sub>X, use any word processing software that you have. SFI's Publications Office prefers Microsoft WORD. Be sure that it is clear which title introduces a new section (e.g., centered text and all capitals), a subsection (e.g., flush left, and bold or all capitals), and so on. Provide two copies of your file on electronic media: one in your word processor's format and one unformatted in ASCII characters. Also, please provide one printed copy so we can make sure that all formulas, special characters, and font changes have been converted correctly.

If you use a stand-alone word processing system or cannot send us electronic media for any reason, then simply send two printed copies of your manuscript. We will try to scan in your chapter to avoid complete retyping. However, we must begin from a high-quality, laser-printed, "clean" copy. On a second hardcopy, mark any changes, indexing terms, and notes to SFI's production staff. You can even write in equations, if you must.

### 3.3 CONSTRUCTS

**3.3.1 By-Line** Your by-line should include your department, institution, physical address, and your electronic mail address. Do not include your title. For more than one author, list them as you prefer. If all the authors are not from the same institution, please note the institution and address for each one.

**3.3.2 Title** The title should be relatively brief, although you can include a subtitle after a colon, such as "Example Chapter: Contributing to ...".

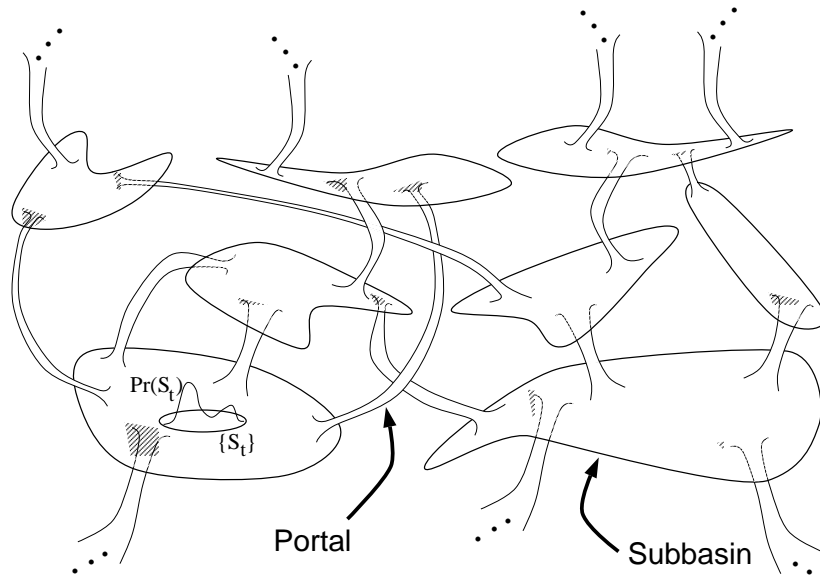


FIGURE 1 Subbasin and portal architecture underlying epochal evolutionary dynamics. A population—a collection of individuals  $\{S_t\}$  with distribution  $\text{Pr}(S_t)$ —diffuses in the subbasins (large sets) until a portal (tube) to a higher-fitness subbasin is found.

**3.3.3 Running Header** On odd and even pages, the author name(s) and a shortened title appear next to the page number. This is implemented in  $\text{\LaTeX}$  using the `\markboth{Short Title}{Author Name}` command at the beginning of `ColCogChapter.tex`.

**3.3.4 Abstract** Please include an abstract for your chapter. We will be providing an introductory chapter that attempts to connect the chapters. But it will help readers if your manuscript provides a concise summary of the problem addressed, its significance, and your results.

**3.3.5 Graphics** Graphics should be high-quality computer- or artist-generated drawings, charts, and diagrams. If possible, provide your graphics in Adobe Illustrator (“ps” or “eps”) or in bit-mapped “.tif” file formats. If these output formats are not available, please provide original drawings or laser-printed documents. These should be on good-quality paper or vellum; do not send photocopies.

Figure 1 gives an example of how to include figures in the text body and how to reference them in the text.

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Use a sans-serif type, such as Helvetica, to label items within the figure, unless they are mathematical objects. In that case, the objects should use the same font as in the text. If the figure has more than one part, label them with lower case letters in parentheses, such as (a), (b), and (c). Your caption should use the same designations. If your figure or group of figures is too large for one page, it may be split between pages, usually on facing pages within the volume.

Graphics should not exceed the dimensions of 4.75" wide and 6.5" high with a two-line caption. If you have a longer caption, the graphic should be less than 6.75" high; subtract about .25" for every additional caption line.

Please provide sized-to-fit figures rather than oversized drawings. However, all graphics may be reduced further to suit the chapter, the look of the volume, and the needs of SFI Publications.

Black-and-white photographs will usually be accepted. Color photographs or slides will be accepted only with the editors' and SFI's approval.

Graphics should be numbered consecutively using integers from the beginning to the end of the chapter. Do not include the section numbering in the figure number.

Graphics only appear at the top or bottom of pages. Do not use references within the text to figures "above" or "below". Instead, cite them directly using the figure number. Please spell out "Figure" in your citations. When sending a hardcopy of the manuscript, please include your figures as separate pages at the end of your chapter; even if they appear formatted in the text body.

If you use figures that are copyrighted elsewhere, you must obtain permission. If you do not, please provide SFI with the information where to obtain copyright permission.

**3.3.6 Tables** Table 1 gives an example of including a table in  $\text{\LaTeX}$ . When sending a non $\text{\LaTeX}$ 'd hardcopy, tables should be neatly typed and included at the end or placed approximately where you would like them to appear. Include a brief title for the table. Additional information can appear as one or more footnotes under the table.

Tables should be numbered consecutively using integers. Do not include section numbers in table numbering. Tables that do not fit in a 4.75" width in final format may be restructured or reordered. Tables may be turned sideways in final format.

**3.3.7 Equations** Equations within the text should be laterally formatted, such as  $1/2$  or  $(d - 1)/d$ . Displayed equations should use a vertical format, such as:

$$\Phi(n, \sigma) = \sum_{i=1}^{\infty} \frac{t^n}{\sigma^i}. \quad (1)$$

When the displayed equation appears in the middle of a paragraph, the sentence immediately following (like this one) should not be indented. Displayed

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TABLE 1 Contact information for the SFI volume on *Collective Cognition*.

equations should be centered and equation numbers should be flush with the right-hand margin.

Preferably the numbering of equations should use consecutive integers. However, for some highly mathematical manuscripts, it is helpful to reflect section divisions, such as “Eq. (2.1)” for the first equation in section 2. In any case, do not use roman numerals in the numbering system, either for equations or sections.

When citing an equation, use “Eq. (1)”. Do not spell out “Equation”, except at the beginning of a sentence. In  $\LaTeX$  you can use strings to label an equation for easy and automatic cross-referencing. See this chapter’s  $\LaTeX$  source file.

**3.3.8 Footnotes** Footnote citations are superscript numbers.<sup>1</sup>

## 4 BIBLIOGRAPHY

There are two ways to implement the bibliography: (i) The easier way using  $\text{Bib}\TeX$  and (ii) a more  $\TeX$ -explicit way. Both are illustrated in the source

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<sup>1</sup>Use footnotes carefully within your chapter. Some information can be included in parentheses or brackets within the text or, because of the interdisciplinary nature of the book, a long “aside” may warrant a paragraph within the actual text. Also, you can include extra information within the reference list at the end of the chapter or in the appendices. However, you should use the referencing styles shown below and place any comments after the full citing.

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file. The first way is actually to the formatted version; the second way is commented out in the  $\text{\LaTeX}$  source file.

Here are example citations: to an article [8], a paper in a collection [1], a paper in a proceedings [2], a technical report [3], a masters thesis [4], a book [6], a Ph.D. Thesis [5], and an unpublished work [7].

The  $\text{\LaTeX}$  source file tells  $\text{BibTeX}$  to find the bibliography in “colcog.bib”.

If you are not using  $\text{\LaTeX}$ , then use the following guidelines. References should be listed alphabetically by author, not by order of citation. They should be referenced by a bracketed number within the text. Use *The Chicago Manual of Style* (particularly page 423 and style A in section 16) or the *MLA Handbook* as a guide for how to prepare your references. For all references, you can include either first initials or first names. Do not use “et al.” when more than two authors are needed. Provide all of the authors’ names.

## 5 HEADINGS

Note that for all section, subsection, and subhead titles, SFI’s  $\text{\LaTeX}$  macros put the characters into uppercase. If you need a lowercase character within these macros, please use the  $\text{\lowercase}$  command.

### 5.1 SECONDARY HEADING OR SUBSECTION

A secondary heading allows extra spacing. The type is slightly smaller.

**5.1.1 Tertiary Heading** This follows on the same line of text. It is useful for definitions and other special paragraphs. Following paragraphs will have a first-line indentation. If you need additional levels of headings, use indented paragraphs.

Be sure to indent the first line of your paragraphs unless they follow an equation, such as:

$$f(1) = ab_2 + sb_1 , \tag{2}$$

where the remaining paragraph is an extension of that preceding the equation.

## 6 INDEXING

One of the most effective ways for readers to find information in your chapter and also to provide more coherence to the volume as a whole comes from having an good index to keywords, ideas, and results. This is done simply by inserting appropriate commands at the location where the index item occurs in the  $\text{\LaTeX}$  source. Use  $\text{\index{item}}$  for a simple entry or  $\text{\index{item!subitem}}$  or  $\text{\index{item!subitem!subitem}}$  for more specialized entries.



If you cannot use L<sup>A</sup>T<sub>E</sub>X to index or, at some point, are editing a hardcopy, use a highlighter marker or a red pen to note the key words that should appear in the index. These may include vocabulary words, key hypotheses, theories, key concepts, and the like. Proper names may also be used, but it is sometimes helpful to link names with concepts, theories, or ideas. If you want to include index entries that do not appear in the text or show subheadings for entries, write them in the margins of your chapter. It is very helpful if you note subjects in the margins when they are referred to by more than one name in the literature. If you have questions, please contact Della Ulibarri (dlu@santafe.edu).

## 7 PROOFREADING

Please use an electronic spelling checker as you edit your chapter. This will help reduce simple typographical errors.

Your manuscript will be prepared in its final format and copy-edited before it is sent to you for proofreading. This will be a mock-up copy with figures roughly placed. Additional changes could be made by the editor or the publications staff during final proofreading. However, you will only see your paper once before the volume is sent to press. Please proofread very carefully. We recommend having someone else also proofread your manuscript for typos and sense.

Note that the return due date (which will accompany your proof copy) is firm! Papers not received by the requested dates may be sent to press with only the editors' changes. If you need an extension, please contact Della (dlu@santafe.edu) she will extend the due date only if the production schedule allows.

## ACKNOWLEDGMENTS

Acknowledgments should be the last section of the manuscript before the references. This section should include all thank you's and funding support. Do not include this information on the first page. As a section, it is not numbered.

This example chapter uses SFI Publication guidelines and TeX macros written by Ronda Butler-Villa, Della Ulibarri, and Marylee Thompson.

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## APPENDICES

### A THE FIRST APPENDIX

Place ancillary material here.

### B THE SECOND APPENDIX

Place ancillary material here.

## REFERENCES

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