WordRef User's Guide
version 1.3
16 December 1989
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1.   Introduction

WordRef is an application which allows users of Microsoft Word to define and refer to cross-references and to have citations and bibliographies automatically generated. This is accomplished via the Print Merge facility of Microsoft Word: the cross-references and citations are print merge variables (enclosed in « and ») which the WordRef application scans and provides values to.

WordRef is being distributed under the ShareWare system. If you find it useful, the price is $25, which should be sent to:
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        Riverside, RI 02915-5016

Permission is granted to copy and distribute WordRef, provided that the complete package (application, stack, desk accessory, and document) is kept together, and that the package not be sold commercially for more than the reasonable cost for the distribution medium.

Bug reports or suggestions can be mailed to the above address or sent via electronic mail to "man@cs.brown.edu".

There have been at least two earlier applications released which use the Print Merge facility of Microsoft Word for similar purposes. I have opted to write my own because neither one of these (Scholar's Aid and Xref) were general enough to suit my needs. I have tried to make this application as flexible as possible so that it can accommodate virtually any bibliographic style or cross-referencing needs. Some of the features of WordRef are

- No limit on the number of counters (variables) used for cross-references.

- Variables can be combined in general arithmetic expressions.

- Increment operators are included for convenience.

- Variables can have strings interspersed with numbers.

• Can scan Word files directly (if Fast Save is off).

• There can be any number of Word files or bibliography files in a single manuscript.

• The bibliography files are kept in the ever popular BibTEX format.

• A HyperCard stack is provided for maintaining the bibliography files.

• An additional field is provided for each card for free-form comments, keywords, etc.

• Several different citation styles are provided to go at the point of reference.

• A user-definable style sheet is used for formatting the bibliography entries.

If you have used an earlier version of WordRef, you will be interested in section 7 of this document which is entitled "Release Notes".

Many thanks are due to Herb Barad who developed the stack on which the WordRef stack was based and kindly gave permission to use it as my starting point. Thanks are also due to Sven Axelsson who substantially reworked the user interface of the WordRef stack during testing.
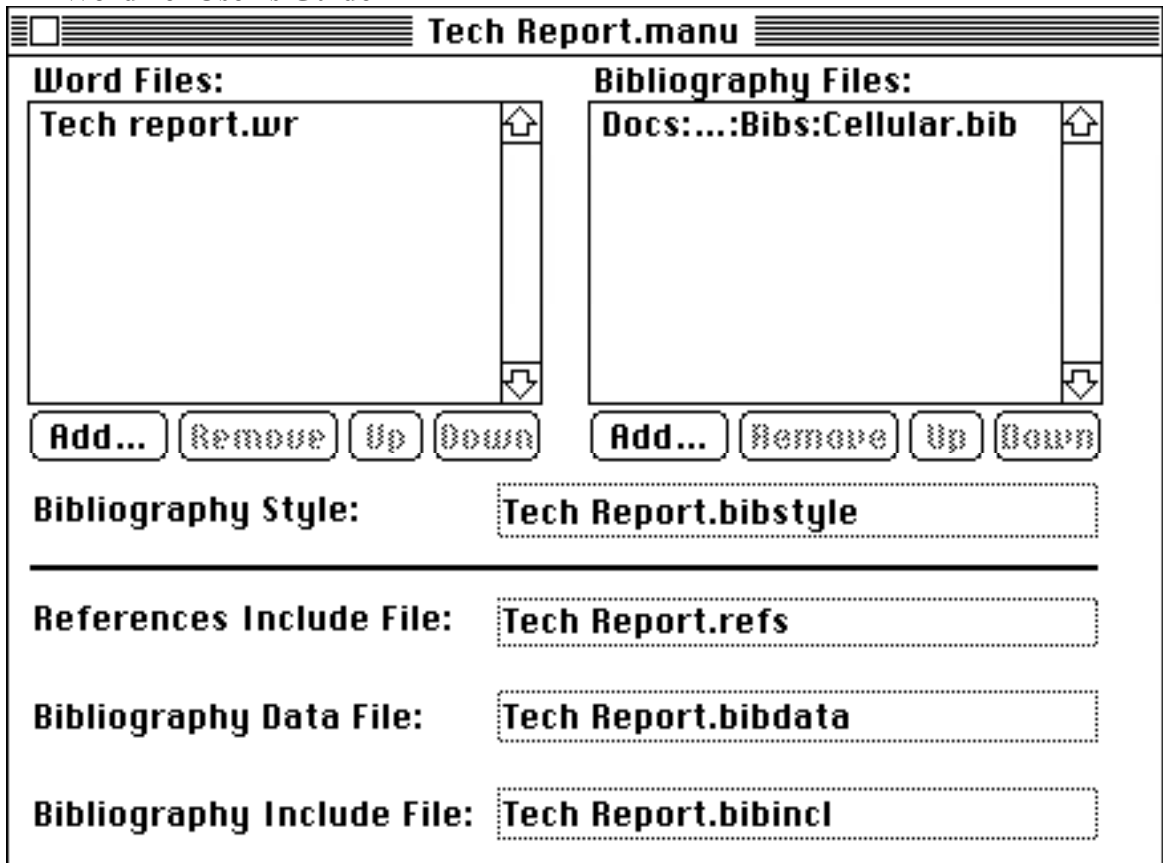
2.   The WordRef Application

The WordRef application is what scans all the Word files looking for references and citations, scans the bibliographic databases if necessary, and then outputs the files which will be used by Word's Print Merge facility to generate the final document.

First, a word about nomenclature. A <u>cross-reference</u> is a tag used to name a figure or other part of a document; there are two parts to it: the <u>definition</u> which gives a value to the tag and possibly many <u>references</u> which use the value assigned to the tag. <u>Citations</u> are the tags which occur at the point in the file where a bibliographic reference is cited.   The <u>bibliographic references</u> (or simply <u>references</u>, if the context is clear) are the items which occur *en masse* in the bibliography.

2.1.   Manuscripts

A "manuscript" is a WordRef document. It is a collection of possibly many Word documents (but not more than around 32,000 of them…) and possibly many BibTEX text files (same limitation) along with several miscellaneous files and a specification of the options to be used in generating the bibliographies. A typical manuscript file appears below.

```
┌─────────────────────────────────────────────────────────────┐
│ ▤□ ════════════ Tech Report.manu ════════════                │
│                                                               │
│ Word Files:              Bibliography Files:                  │
│ ┌──────────────────┬─┐   ┌──────────────────────────┬─┐       │
│ │ Tech report.wr   │⇧│   │ Docs:...:Bibs:Cellular.bib│⇧│      │
│ │                  │ │   │                          │ │       │
│ │                  │ │   │                          │ │       │
│ │                  │ │   │                          │ │       │
│ │                  │⇩│   │                          │⇩│       │
│ └──────────────────┴─┘   └──────────────────────────┴─┘       │
│ [Add...][Remove][Up][Down]  [Add...][Remove][Up][Down]        │
│                                                               │
│ Bibliography Style:      Tech Report.bibstyle                 │
│ ───────────────────────────────────────────────              │
│ References Include File: Tech Report.refs                     │
│                                                               │
│ Bibliography Data File:  Tech Report.bibdata                  │
│                                                               │
│ Bibliography Include File: Tech Report.bibincl               │
└─────────────────────────────────────────────────────────────┘
```

2.1.1. Word files and bibliography files

The Word files are shown in a scrolling list toward the top left of the manuscript window and the bibliography files in a similar list toward the top right. Hitting the "Add…" button under either of this lists will add new files to the corresponding list. Shortcut: if you hold down the command key while hitting the "Add…" button, you will continue to be prompted for files until you cancel out of the dialog. If the file is in the same directory as the manuscript file, the short name appears (this goes for all the file names in the manuscript); otherwise the fully qualified name appears. If the fully qualified name is too long to fit in the given space, it will be abbreviated in such a way as to show as much of the context as possible.

Files can be removed from the Word or bibliography lists by selecting them and choosing the corresponding "Remove" button. The files can also be rearranged by selecting a file and hitting either the "Up" or "Down" buttons. The order in which the references and citations are processed in the Word file is important, so if there are multiple files, make sure they appear in the order you intend to have them in the final document. Right now, the order of the bibliography files is only important if the same key appears in more than one file (the first one will be used and a warning will be issued).

2.1.2. Miscellaneous files

The files which are above the solid black line (including the Word and

bibliography files) are input files; those below the black line are output files. The files are specified by clicking in the dotted rectangle to the right of the corresponding label. This causes a dialog box to pop up prompting for the name of the file. An incorrect file name can be either replaced by clicking again in the dotted rectangle, or deleted by holding the command key down while clicking in the dotted rectangle.

Bibliography style: This is a Word file which specifies, for each type of reference, how the fields should be formatted. See section 3.1 for a description of the types of references and section 5.3 for information about the format of this file. This must be specified if "Output Bibliography" or "Output Everything" is selected in the "Options" menu.

References include file: All the cross-references and citations will be put into this file as «SET» directives for Word's Print Merge facility. This file should be included at the top of each Word file in the manuscript using the syntax "«INCLUDE *file-name*»", where *file-name* is the name of the file. This should be the first thing in the file unless you are also including a bibliography in this file, in which case it should be the second thing (keep reading).

Bibliography data file: This data file collects all the information needed for generating a bibliography. If the manuscript contains several files, this file should be included in only the file in which the actual bibliography will occur. It should be named as the very first thing in that file using the syntax "«DATA *file-name*»", where *file-name* is the name of the data file.

Bibliography include file: This file is included in the actual location within the file where the bibliography is to appear. It should be included at that point with the syntax "«INCLUDE *file-name*»", where *file-name* is the name of the file.

2.1.3. Citation options

The citation options control how the citation tags will be generated. The citation options window appears below.

```
┌─────────────────────────────────────────┐
│                                          │
│  ┌────────────────────────────────────┐  │
│  │        Citation Options            │  │
│  │  ☐ Omit Citations in Text          │  │
│  │  ○ Use Numbers Starting From: [1]  │  │
│  │    Number in: ○ Citation order     │  │
│  │               ⦿ Alphabetical order │  │
│  │  ⦿ Use Labels                      │  │
│  │    ○ From Key Field                │  │
│  │    ⦿ From Main Author & Year       │  │
│  │        Letters of Author's Name:[99]│ │
│  │        Digits of Year: [2]         │  │
│  │        Template: [ayt]             │  │
│  │    Example: Rapunzel74b            │  │
│  │   ( OK )  ( Cancel ) (Bibliography...)│ │
│  └────────────────────────────────────┘  │
│                                          │
└─────────────────────────────────────────┘
```

. "Omit Citations in Text" simply defines each of the citations to be the null string. The references are collected normally and the rest of the citation options will be applied to the key which finally appears in the bibliography. For example, if "Omit Citations in Text" is selected along with "Use Numbers Starting From:" with a value of 1, the final bibliography will use numbers starting from 1 for the keys. This option is useful if you have a general bibliography and don't want to bother quoting things specifically.

"Use Numbers Starting From:" and the number which follow it mean that the citations will be numeric. The numbers will be incremented according to the order in which the articles are cited (two citations to the same article will receive the same number) if "Citation Order" is chosen for the "Number in" option; the alternative is to sort the bibliography alphabetically by author and then assign the numbers. In either event, the bibliography will be sorted according to the citation numbers.

"Use Labels" means that the citation style will be some alphanumeric label, which will also be used for sorting the bibliography. There are two ways that this alphanumeric label can be generated. "From Key Field" will use the key field exactly as it is specified in the citation (and hopefully found in the bibliographic data base). "From Main Author & Year" will generate a key based on the last name of the main author and the year, if it occurs. See section 3.2 for a definition of what exactly constitutes a last name. "Letters of Author's Name" lets you specify how many letters of the author's name will be used to generate the key and "Digits of Year" specifies the last how many digits of the year will be used (reasonable values are 2 and 4). The template allows the format of the citation to be customized considerably. Where an "a" or "A" appears in the template, the author's name is substituted for it (forced to all upper-case for "A"). The year gets

substituted in for a "y". Finally, a "tiebreaker" will be substituted in for a "t" or a "T", if there should be more than one reference by the same author in the same year. For example, an article by Thomas van Vleck published in 1980 would be specified by "Vlec80" if "Letters of Author's Name" is 4, "Digits of Year" is 2, and template is "ayt". It would be "VLEC80" if the template were "AyT".

The "Bibliography…" button puts up the window for setting the bibliography options (see below). If you subsequently cancel out of the bibliography options window, any changes you have made here will also be canceled.

It should be pointed out that in some cases, special steps need to be taken if no author is present in a given reference. If the "Number in Alphabetical Order" option is chosen with numeric citations, or a tag is generated using the author, this situation may come up. If there is no author present, then the first name in the "Editor" field will be used. If there is no editor present either (this should only happen with type "Manual"), then the first word in the "Organization" field is used.

2.1.4. Bibliography options

The bibliography options specify how the bibliography entries will appear. The bibliography options window appears below.

So far, all the bibliography options concern how the authors will appear in the bibliography. "Reverse Several Authors' Names:" and the number following it

mean that the first that many authors will have their names appear as Last Name, First Names. Putting in a 99 will ensure that all the authors will have their names reversed (the most authors I ever saw on a single paper was 54, on a high-energy physics article which apparently took 50 people to run the accelerator and 4 to do the thinking, but that's another story). "Insert Conjunction Before Last Author" controls (surprise) whether a conjunction is inserted before the last author. The specific conjunction can be specified in case you're writing for a French journal or something. If there is a conjunction to be put in, you have your option as to whether the punctuation will appear before it never, always, or only if there are more than two authors. If "Use Authors' Initials" is selected, then full names will be abbreviated to initials. Because of this option, the bibliographic database should contain full names wherever possible, to allow as much flexibility as possible. The initials are not separated by a space, i.e., they will be "P.T. Barnum" rather than "P. T. Barnum". The punctuation between authors can also be specified. The punctuation will be used to separate any authors without conjunctions between them and sometimes before the conjunction (see above). To aid understanding of the various parameters, the author parts of two example references appear formatted in the window according to the current set of options. The names cover the gamut of what might appear: a "van", a compound last name "Vander Zanden", and a "Jr." and a "III".

2.2. Cross-references (simplified)

One of the main purposes for which WordRef was written is to allow symbolic cross-referencing within a file or set of files. This allows you, for example, to define "projected_GNP" to have a number in one place in the file and then to simply refer to "projected_GNP" elsewhere in the file. While this is not so wildly useful in and of itself, when combined with the ability to define variables and perform arithmetic, this provides a very general mechanism for doing things like numbering your figures and equations automatically and having all the references change appropriately if you insert a new figure in the middle.

2.2.1. Variables

A WordRef variable is any string of characters beginning with an alphabetic character (a-z, A-Z) or underscore (_) followed by any number of alphabetic, numeric (0-9), or underscore characters. (If you think this looks a lot like a valid C symbol, you're right!) The variable can contain either numbers or text or combinations of the two. Variables are defined in definitions and can appear in either references or expressions.

2.2.2. Definitions

A definition defines a WordRef variable. A definition is of the form

$$\text{«\#variable:expression»}$$

where the German open and close quotes (« and », respectively) signify a Word Print Merge variable, the "#" is the flag to WordRef that it should process this Print Merge variable, ":" is the assignment operator, and `expression` is an expression which specifies what value the variable should take on. The complete syntax for expressions is given in section 4.1; here I present only the two operators

which will get 90% of the work.

Incidentally, the reason that ":" is used as the assignment operator is that a Word Print Merge variable can apparently consist of any characters *except* "=" or "»", the former of which is the likely assignment operator.

The simplest expression simply sets the variable to a constant, for example,

```
«#figure:1»
«#ratio:"around 23"»
```

Here you can see that constants are either numbers or strings enclosed in (unsexed) double quotes (`"`). The two most useful operators are concatenation (`&`) and pre-incrementation (`++var`).

Concatenation glues two things together, one right after the other.

Pre-incrementation causes the variable to be incremented by one and uses the new value. If the variable contains a number (sequence of digits 0-9), this is an obvious operation. If the variable does not contain any numbers, then this is an error. If the variable contains more than one number with intervening characters (e.g., "`(1.2)`"), the last number in the sequence will be incremented (in this case, to "`(1.3)`"). If the variable has never before been defined, it is assumed the value is zero.

Examples of these appear below, along with what the final value of the symbol will be.

```
        «#chapter:1»            1
  «#section:chapter&"."&1»  1.1
        «#table:0»              0
  «#projected_GNP:++table»  1
«#projected_deficit:++table»   2
  «#next_section:++section» 1.2
  «#deficit_vs_GNP:++figure»   1
```

2.2.3. References

A reference has a similar format to a definition:

```
«#variable»
```

Note the lack of a ":" in the Print Merge variable. The variable must be defined exactly once in the suite of Word files contained in the manuscript. The reference *may* precede the definition, and, in fact, may be in a different file from the definition. If the variable is not defined, or if it is defined more than once, a diagnostic message is given by WordRef.

2.2.4.　Silent references and other caveats

Though the syntax of the "#" Print Merge variables may look disarmingly like a programming language, there are some subtle but important differences.

• The definitions are processed in the order they occur in the file, after which the values are assigned to the references. Thus, references can precede the places where they are defined.

• Variables used in references must be defined exactly once.

• Variables which are have not been defined before being used in expressions are assumed to be zero (0).

• Since each of the definitions is, itself, a Print Merge variable, this means that each symbol must have a single value. For example, if you have something like

```
«#chapter:1»«#first:chapter»
```

• • •

```
«#chapter:chapter+1»«#second:chapter»
```

• • •

```
«#chapter:chapter+1»«#third:chapter»
```

you have a definite problem since the Print Merge symbol `«#chapter:chapter+1»` needs to take on the values 2 and 3 (not to mention that each of your numbers will be duplicated — once for the definition of `chapter` and once for the definition of the specific name for that chapter — if this were the only problem, it could be fixed by using hidden text). To get around this problem, WordRef allows "silent" definitions. If any Print Merge variable begins with not one, but (count them!) two #'s, the Print Merge variable becomes the null string. Thus, if the above example were instead written

```
«##chapter:1»«#first:chapter»
```

• • •

```
«##chapter:chapter+1»«#second:chapter»
```

• • •

```
«##chapter:chapter+1»«#third:chapter»
```

then the desired effect could be achieved. Silent definitions are also useful for initializing things that change at the top of every chapter, for example:

```
Chapter «#GNP:++chap»«##fig:chap&".0"»«##eq:"("&chap&"-
                      0)"» ...
```

Then, assuming `GNP = 5`, putting `«#GNP1988:++fig»` will result in the string

"5.1" and «#GNPvsUnemployment:++eq» will result in "(5-1)".

2.3. Citations

Citations are very simple; they have the format

«@key»,

where `key` is the key given to the bibliographic entry in the bibliographic database. The "@" is the tag which tells WordRef that this Print Merge variable is intended to be a citation. You will not be successful if the key contains spaces or commas.

2.4. Application menus

The items in the File menu work just as they do in any other Macintosh application you have used with two exceptions: (1) a Close will automatically initiate another Open (you can cancel out of it to stay in a state where you have no manuscripts open, but this doesn't seem very useful; you can also choose New to create a new manuscript), and (2) there is an item called "Compile References…" which actually parses all the Word files and, if necessary, scans the bibliographic databases.

The Edit menu is entirely unused by the application; indeed there is nothing to cut or paste that is not in a dialog box. The menu is provided for the convenience of desk accessories.

The first three items in the Options menu determine what kind of Print Merge variables WordRef will process in parsing the Word files (and what miscellaneous files it requires you to have given values to before doing a Compile References…).

The "Verbose" option in the Options menu forces extra output to make debugging your manuscript easier.

The final two items in the Options menu have been described in detail in sections 2.1.3 and 2.1.4.

3. The WordRef Stack

The WordRef stack is used to update BibTeX bibliographic databases and to convert imported databases to the format that the WordRef application uses (more about this in section 5.2). It keeps a separate card for each reference in the database, as if you had a box of index cards. The cards are organized into 13 different reference types, according to what fields are required to be, or may optionally be present. *This stack requires HyperCard version 1.2.2 or later.* It also requires the font Helvetica 10 in the System file.

3.1. BibTeX reference types

The following table details, for each of the reference types, what fields are required and what fields are optional. In all cases, the key field (the one which

appears after the "@" in a citation) is a required field, so it is left out of the table. (Note: key fields should not contain spaces or commas.) In addition, each reference type allows an optional "comments" field which is also left out of the table.

Reference Type

Required Fields

Optional Fields

article

```
author
 title
journal
 year
```

```
volume
number
 pages
 month
  note
```

book

```
   title
publisher
   year
```

```
author
 editor
 volume
 series
address
edition
 number
 month
  note
```

booklet

```
title
```

```
   author
howpublished
  address
    year
   month
    note
```

inbook

title
publisher
year

author
editor
volume
series
number
edition
type
address
chapter
pages
month
note

incollection

author
title
booktitle
year
publisher

editor
volume
number
chapter
pages
series
edition
type
address
month
note

inproceedings

        author
         title
      booktitle
          year

              organization
               publisher
                volume
                number
                 pages
                address
                 editor
                 series
                 month
                  note

   manual

         title

               author
              organization
               address
                year
               edition
               month
                note

 mastersthesis

        author
         title
        school
         year

               address
                month
                 type
                 note

    misc

                 title
               author
            howpublished
                 year
                month
                 note

```
phdthesis

                              author
                               title
                              school
                               year

                                                  address
                                                   month
                                                    type
                                                    note

      proceedings

                               title
                                year

                                                  editor
                                                publisher
                                              organization
                                                  month
                                                  address
                                                  volume
                                                  number
                                                  series
                                                   note

       techreport

                               title
                               author
                             institution
                                year

                                                    type
                                                   number
                                                   month
                                                  address
                                                    note

      unpublished

                              author
                               title
                                note

                                                    year
                                                   month
```

3.2.   Author and editor fields

The `author` and `editor` fields are a little different from the rest, in that

WordRef actually has to parse them in order to put them in the right format. Any other BibTEX processor will have to do the same. To allow this reformatting to take place, the names in the `author` field (anything that holds for the `author` field holds for the `editor` field, as well) must conform to certain rigid formats. Multiple authors are separated by the word "and". So, if you have three authors, A, B, and C, the `author` field should read "A and B and C". The individual names are divided into four parts, called *first*, *last*, *von*, and *jr*. The last two may be blank. The valid formats are

```
          First von Last
        von Last, First
      von Last, Jr, First
```

A `von` is recognized because it begins with a lower case letter. There can be more than one word in any part except the `Jr`, for example, "Joseph Martin de la Ground Round, Jr." Here we have

```
      First = Joseph Martin
          von = de la
        Last = Ground Round
          Jr = Jr.
```

Thus, for example, a multiple word last name could not be entered in format 1 unless there is a `von` part, because otherwise it would be impossible to separate the first word of `Last` from the last word of `First`. If there is a `Jr`, format 3 must be used.

Since the names are parsed and can be formatted in different ways, it is advised that you enter the full first names into the bibliographic database wherever possible. If the particular format calls for using the authors' initials, they can be automatically generated. On the other hand, if the format calls for the full first names and you have entered only initials into the database, you are out of luck.

3.3. What each button does

Goes to the home stack.

This button puts up a pop-up menu used to add new references to the bibliography and to move through the references by type. Picking any of the menu items will add a new card of the given type. If either the shift, the option, or command key (I

hate having to remember which key to hold) is held down while clicking on the button, the stack will go to the next card of that type.

Sorts the stack by key. All the blank cards will wind up at the beginning of the stack.

Fast-flips through all the cards in the stack.

(Head card only.) Puts up a set of instructions for the stack. Click anywhere in the window except the scroll bar to make it go away.

(Head card only.) Initiates a search. You can type several words for which to search. Hitting return actually begins the search. A card will be matched only if <u>all</u> the words in the search string are found somewhere on the card. The words do not have to match complete words, and the matching is case-insensitive. The words do not have to be found in the same card field. For example, "find "dick herma"" would match a card which contained "Moby Dick" in the "title" field and "Herman Melville" in the "author" field. Hitting the enter key after a successful search will initiate another search from the current location. Occasionally a successful search will terminate without any text highlighted. When this occurs, it is because the

text was found in the comments field, which is automatically hidden every time a data card is left. Opening the comments field (see below) will allow you to find the matched text, although it will not be highlighted.

(Head card only.) Opens the strings field. Strings are of the form

```
abbrev = "full-name"
```

Whenever a field begins with a period (full-stop, "."), WordRef knows to look for a string with the same name but without the period. For example, if you had a field with the contents ".abbrev", then WordRef would look for a string with the name "abbrev" on the left side of an equal sign and substitute in the value found on the right side of the equal sign. This is very useful if you submit papers to journals with different styles. For example, some journals may spell out month names completely, whereas others may abbreviate them. In the month field of a particular card, you might put something like ".dec", and then by changing the strings field you could have it expand either as

```
dec = "Dec."
```

or as

```
dec = "December".
```

Likewise, different journals may abbreviate journals differently.

(Head card only.) Goes to the first data card whose key is not blank (this may take a moment). This is useful for skipping over all the blank cards that cluster near the beginning of a sorted stack.

Read Strings...

(Head card only.) Reads in a file containing string definitions. The file should previously have been written using the "Write Strings…" button. The "Read Strings…" button does not clear the contents of the Strings field before reading. Any strings from the file that are not already present in the field put at the end of the field; strings which were already present in the Strings field are replaced. If you want the Strings field to match the contents of the file exactly, you should clear out the field first by hand and then do "Read Strings…".

Write Strings...

(Head card only.) Writes out the contents of the Strings field into a file which can be read using the "Read Strings…" button.

Read BibTeX...

(Head card only.) Reads in a BibTEX text file. If this file was created with Word, it should have been saved as "Text Only". You will be prompted for the name of the file. A new card will be created in the stack for each reference in the file. Once all the references have been read in, the cards will automatically be sorted by key.

Write BibTeX...

(Head card only.) Saves the current stack as a BibTEX text file. You will be prompted for the name of the file (a reasonable name will be suggested) to create. You will also be asked

whether to save for WordRef or some other BibTEX processor. This is because other BibTEX processors need to use a straight ASCII format with no Macintosh special characters. A reference will be written for every card in the stack with a non-blank key.

Find Duplicate Keys

(Head card only.) Searches the stack to see if there are any duplicate keys. This has the side-effect of sorting the stack by key. If no duplicates are found, a message to that effect is displayed. If any duplicates are found, their keys will be displayed in the message box. If the list of duplicate keys extends off the right edge of the message box, the information can be retrieved by deleting text to the left of what cannot be seen, or by selecting the entire contents of the message box, copying to the clipboard, and pasting into something that will let you see it all.

New Stack...

(Head card only.) Creates a new stack that is identical to the current stack (except for the name, of course). You will be prompted for the name of the new stack. WordRef is designed to handle multiple bibliographies. For this reason, the suggested mode of operation is to leave the original WordRef stack empty, and use this button to create a new bibliography stack every time you want a distinct set of references.

Clear...

(Head card only.) Removes all the references from the stack. You will be prompted to make sure this

is what you really wanted to do before proceeding. This is useful if you forgot to do "New Stack…" before doing a "Read BibTeX…".

(Data cards only.) Converts a card from one reference style to another. For example, if you typed in a reference as an Article and later decide that it should have been an InProceedings, this button can do it for you. When you push the button, a menu will pop up asking to what style you want to convert. Simply choose the new style you want, and the conversion will take place. Anything you typed in a field in the old style which does not exist in the new style will be automatically put into the "Other Fields" field.

(Data cards only.) Goes to the head card of the stack.

(Data cards only.) Opens up the Comments field. A window like the one below will appear. You can put anything you want into this field (up to around 32,000 characters). Unlike the "notes" field, what you put here will not appear in the formatted bibliography. You can use this to put keywords for searching or notes to yourself about the content of the article. Clicking in the box to the left of

"Comments" or leaving the card will cause the field to become hidden. The icon has a shadowed box around it if the Comments field is empty and a plain box if the Comments field has text in it.

```
┌──────┬────────────────────────────┬──┐
│  □   │        Comments            │ ⬆ │
├──────┴────────────────────────────┤▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │▓▓│
│                                    │⬇ │
└────────────────────────────────────┴──┘
```
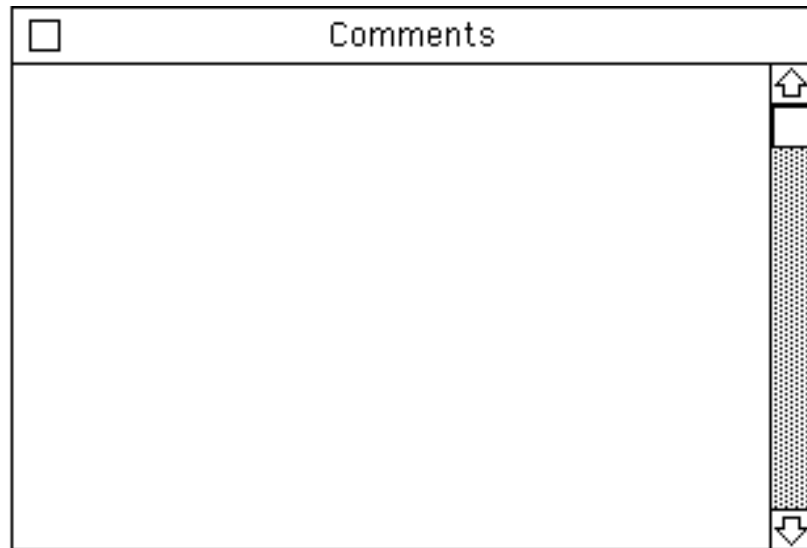
```
┌──────────────────┐
│  Other Fields... │
└──────────────────┘
```

```
┌──────────────────┐
│  Other Fields... │
└──────────────────┘
```

(Data cards only.) Puts up a scrolling field for putting extra fields which may be desired for other BibTeX systems. It is suggested that you not use this feature if you are only going to use the references with the WordRef application. In any event, the fields you put here should have the format

       <name> = {<contents>}

and should be separated by return characters (the lines may wrap without return characters, so do not be confused) without commas. If you intend to use the bibliography file with WordRef, you should avoid putting double quotes (") anywhere in the field. You can work around this by using typographer's quotes (" and "), if need be.

The button is surrounded by a shadowed box if the Other Fields field has no text in it; a plain box

around it means that there is text in the Other Fields field.

(Data cards only) The dog-ears at the top-right part of the cards allow you to go to the next or previous card. Clicking on the lower-left dog-ear goes to the next card; the upper-right goes to the previous card.

4.   The WordRef Browser Desk Accessory

WordRef comes with a desk accessory (DA) to make it easier to find citations while writing your document in Microsoft Word. See the Macintosh User's Guide for instructions on installing DA's.

The WordRef desk accessory will be able to open the bibliography files created by the WordRef stack (version 1.3 or later) using "Write BibTeX…" followed by pressing the "WordRef" button. It puts up a scrolling list of all the keys in the file. You can select a key by clicking on it, and copy it to the clipboard using the Copy command. You can also show the text of the reference either by double-clicking on the reference or by choosing "Show" from the browser's menu. Finally, you can open a new bibliography file by choosing "Open…" from the browser's menu.

5.   Putting it All Together

The general procedure for using WordRef to put together a paper is as follows. First use the WordRef stack to enter the bibliographic references you may use in the paper. Then choose the "Write BibTeX…" button in the stack to create a text-only BibTEX file which will be used by the WordRef application.

Then write the paper (this is sometimes the hard part…). This doesn't have to be done strictly after the previous step; the only important thing is that the text-only BibTEX file contain all the references you are going to cite. You can put in cross-references by using the "«#...»" format and citations by using "«@...»". What you put into your file depends on whether you are using WordRef to generate a bibliography before (actually, on whether the bibliography goes in this particular file, if you have a multi-file document). If there is not a bibliography in this file, you start it out by saying

```
«INCLUDE MyFile.refs»
```

where you substitute the correct name for `MyFile`. Do not hit a return after the "»" unless you want it to appear in the file. If there is a bibliography in the file, it should look like this:

```
«DATA MyFile.bibdata»«INCLUDE MyFile.refs»
```

```
                (The main part of the paper goes here)
```

Bibliography

```
                    «INCLUDE MyFile.bibincl»
```

Again, you should fill in the correct name for `MyFile`.

Save the file from within Word. This may seem kind of obvious, but there's a subtle point here about saving the file. WordRef reads the Microsoft Word file directly. It does this even though I don't know the format of Microsoft Word files. What I do know is that the text is stored as plain text in the file most of the time. The only time it is not saved that way is when Fast Save is turned on (the default is to do a Fast Save whenever you choose the Save menu item). Even when Fast Save is turned on, a "slow" save happens fairly frequently if the document has changed a lot. What I am trying to get at is that WordRef may have problems if you make a few small editing changes to the Print Merge variables which it is supposed to understand and then save the file out using the Fast Save option. To get around this problem, you need to choose "Save As…" from the File menu and then un-check "Fast Save" in the dialog box and click OK. (You will have to confirm that you want to overwrite the file.) For safety's sake, you should always do this prior to running the files through the WordRef application.

If you are using WordRef to generate a bibliography, you need to set up a bibliographic style sheet as described in section 5.3.

Run the WordRef application. The first time you do this, you will need to set up a new manuscript file. I tend to name my manuscripts with the name "MyFile.manu". If you do the same thing, then WordRef will suggest a lot of reasonable names for you as you set up the miscellaneous files. You need to add all the Word and bibliographic files to the manuscript as described in section 2.1.1 and set up the miscellaneous files as per section 2.1.2. If you are generating a bibliography, you want to set the Citation and Bibliography options, as well.

Finally, go back to Word and do a "Print Merge…" into a "New Document". If all goes well, you will have a fully formatted document with all the cross-references and citations and bibliography entries filled in.

6.   Advanced Issues

6.1.   All about cross-references

The description of cross-references in section 2.2 was somewhat simplified in that it did not describe the full gamut of operators or worry about things like operator precedence. The complete format for an expression is:

```
                        variable
                         number
                      expr + expr
                      expr - expr
                      expr * expr
                      expr / expr
```

```
        - expr
      ( expr )
    variable ++
    ++ variable
    variable --
    -- variable
      "string"
    expr & expr
```

The operators +, -, *, and /, represent addition, subtraction, multiplication, and division, respectively. - is also used for negation. In all these cases and in enclosing an expression within parentheses, the expressions are converted to numbers before the operation takes place. The expression must begin with a number for this to be considered a valid operation, and anything that occurs after the number will be lost. For example, the expression

```
        "1abc" + "4def"
```

will result in the value 5, whereas the expression

```
        "1abd" + "def4"
```

will result in an error. (The expression `"1abd" + def4` would be OK, because `def4` would be considered a variable.)

++ and -- are the increment and decrement operators, respectively. They cause the variable to be increased/decreased by one. The value of the expression depends on whether the operator precedes or follows the variable: if the operator precedes the variable, the incremented/decremented value of the variable is used in the expression; if it follows the variable then the original value of the variable is used. For example, if `fig` had the value 4, then the expression

```
        2 * (++fig)
```

would have the value 10, whereas the expression

```
        2 * (fig++)
```

would have the value 8. In either case, the new value of `fig` would be 5. The increment/decrement operators also work a little differently from the other arithmetic operators in the way that they handle non-numeric characters in the variable. The other operators require that the variable begin with a digit; the increment/decrement operators parse the variable into separate number fields and increment/decrement the last one. So for example, if the variable `fig` contains the value "Figure 3.9.", then doing ++fig would result in its having the value "Figure 3.10.".

The final operator, &, is the string concatenation operator. If the expression is a number, it will be converted to a string and concatenated.

The order of precedence, from the lowest to the highest, is given in the following table:

```
        &
     +,  -
     *,  /
    ++,  --
     - (unary)
```

All of the binary operators (`&`, `+`, `-`, `*`, `/`) are left-associative.

In addition to the operators above which can appear in expressions, there are several assignment operators. The possible assignments are

```
«#variable : expr»
«#variable +: expr»
«#variable -: expr»
«#variable *: expr»
«#variable /: expr»
```

The first of these is the normal assignment operator. The other four cause the expression to be added to, subtracted from, multiplied by, or divided into the given variable, respectively. Thus, for example, if `figure` is 2, then the expression

```
«#figure *: 3»
```

would have the value 6. Note the difference here: if `figure` is `"1.3"`, then the expression

```
«#figure : ++figure»
```

would have the value `"1.4"` whereas the expression

```
«#figure +: 1»
```

would have the value 2 (since an arithmetic operation is performed, which converts the "1.3" into the number 1).

6.2.   The BibTEX file format

The BibTEX file format allows considerable leeway in its syntax. The file format which is understood by the WordRef application is a subset of the full file format which, by a happy coincidence, is the same subset which the WordRef stack produces. The syntax looks like this:

```
@reference-type{key,
    field1 = "string1",
    field2 = "string2",
    • • •
    fieldn = "stringn"
}
```

where `reference-type` is one of the thirteen reference types listed in section 3.1. `key` is the key which will be used in the citation to identify the bibliographic reference. The `field1 ... fieldn` are the names of the required or optional

fields for the particular reference type, and the `string1 ... stringn` are the values of the fields. Note that there is no comma after `stringn`.

If you have a pre-existing BibTEX file, you will want to read it into the WordRef stack and use the output of the WordRef stack as the input to the WordRef application. This is because the WordRef stack understands a wider variety of syntax in the file. In particular

• The reference may be enclosed within parentheses rather than braces (e.g., `@book(...)`).

• Instead of strings enclosed within quotes, a series of tokens within braces is permitted.

• White space within quotes or braces is ignored except in as much as it separates the tokens. Thus, you can have returns which will get converted to a space in the final string. In normal BibTEX, the capitalization of the tokens within the braces is modified to suit the particular bibliographic style and braces within braces are used to prevent changes in capitalization. For example, there may be a field like

```
title = {Test Of {English} As A Foreign Language},
```

where the title may appear "Test of English as a foreign language" or "Test of English as a Foreign Language" depending upon the style. The braces around the "English" keeps the capitalization from being altered. *WordRef does not alter capitalization.* Thus, when the WordRef stack reads in the reference, although it retains the braces, it does not write them out when you write the bibliography for use with WordRef. In this case, the title written out will be "Test Of English As A Foreign Language".

• BibTEX allows diacriticals to be expressed. The syntax for the diacriticals is `\tag{letter}`, where `tag` is """" for an umlaut, "'" for an acute accent, "`" for a grave accent, "^" for a circumflex, "~" for a tilde, and "c" for a cedilla. Thus, for example, you could have a field like

```
author = {Erwin Schr\"{o}dinger and Ren\'{e}
                  Descartes},
```

describing a paper I'd love to get my hands on! The WordRef stack converts this into the Macintosh's extended ASCII set, so this reference would be entered into the card as "Erwin Schrödinger and René Descartes". If the particular character does not exist in the Macintosh character set (e.g., "`\c{t}`", the sequence will be unconverted.

• BibTEX has a number of special characters which will be converted; these are shown in the following table:

```
\copyright
```
©
```
\pounds
```

£

`\dag`

†

`\ddag`

‡

`\S`

§

`\P`

¶

`\oe`

œ

`\OE`

Œ

`\ae`

æ

`\AE`

Æ

`\aa`

å

`\AA`

Å

`\o`

ø

`\O`

Ø

`\ss`

ß

`?`` `

¿

`!`` `

¡

`--`

–

`---`

—

The special characters "`\l`" and "`\L`" for "\o(l,–)" and "\o(L,–)" are not converted (they do not exist in the Macintosh character set).

6.3. Setting up bibliographic style sheets

As a service to WordRef users, I am willing to include any bibstyle files that are mailed to me with future releases of WordRef. Of course, I cannot assume responsibility for the correctness of any particular style that is sent to me, but the hope is that eventually together we can develop a library of bibliography styles that encompasses most of the common journals.

The best way to set up a bibliographic style sheet of your own is to start from the CACM.bibstyle file, which formats bibliographic entries in the style used by *Communications of the Association for Computing Machinery*. The basic idea is to tell Print Merge what to do for each different type of reference. The names of the fields which appear for each type of reference are exactly as they appear in the table in section 3.1. If a field is optional, you should always enclose it within the Print Merge directives «IF …» and «ENDIF». For example, if `month` is an optional field you want to include followed by a comma if it appears, you would put

<div align="center">

`«IF month»«month», «ENDIF»`

</div>

at the point in the reference where you would want it to occur.

There are three Print Merge fields which are available which do not occur directly in the reference. These are `key`, `refType`, and `numEditors`. The `key` is the tag which is used to identify the article according to the citation style (see section 2.1.3 for more details). `refType` is one of the reference types which appear in the first column in the table in section 3.1. `numEditors` is used if there is an `editor` field to specify how many editors are present. This is useful for making plurals, for example

<div align="center">

`«IF editor»«editor» (Editor«IF`
`numEditors>1»s«ENDIF»),«ENDIF»`

</div>

which will produce the outputs "Mary Q. Contrary (Editor)," and "Jack Spratt and Peter P. Eater (Editors),", with different values in the `editor` field.

It is recommended that you define a style name for the paragraph style(s) used by the bibliographic entries. This will allow you to import the style(s) into your document in case Word runs out of memory while compiling a bibliography (not a totally unlikely occurrence).

6.4. Changing the defaults for new manuscripts

You can change the default Citation and Bibliography options which will occur when you create a new manuscript if you have a copy of ResEdit or any other resource editor that knows about TMPL resources. In the WordRef application, there is a TMPL resource describing a resource type called "Bibo". If you paste this resource into (a copy of) your resource editor, then you can open the "Bibo" resource contained within (a copy of) the WordRef application and change the options directly.

7.   Troubleshooting

There are a three places where problems can occur. You can run into problems in the WordRef stack, while running the WordRef application, or while performing the Print Merge in Word.

7.1.   WordRef stack

Problem

Probable Cause

Solution(s)

Field does not fit in allotted space.

Either you have a very long field (have you been reading high-energy physics?) or I have not allowed adequate space.

If you feel the space allowed is generally inadequate, report it to me and I'll try to move the card around to allow more space.

If your field is unusually long, you can try typing it in the comments field, so you can see what you are doing, and then cut and paste it into the appropriate field. The information will all be present in the field, even though you can't see it all.

The text is difficult to read when you type it in the fields.

You probably don't have Helvetica 10 in your System file

Use the Font/DA Mover application to install Helvetica 10 in your System file.

Unknown field in importing BibTEX file.

(1) Misspelled field in your BibTEX file or a field that the stack does not support for that reference type.

Correct the spelling in your file (case doesn't matter).

(2) You are using home-brewed fields or using fields that BibTEX supports but the WordRef application doesn't (like `key` or `crossref`).

Do nothing. The information will be automatically read into the "Other fields" field of the card.

7.2. WordRef application

References found but output not selected.

There were Print Merge variables beginning with "#" in the file, but you did not select Output References.

Choose "Output References" in the Options menu (if you have no bibliographic references) or "Output Everything" (if you do).

Citations found but output not selected.

There were Print Merge variables beginning with "@" in the file, but you did not select Output References.

Choose "Output References" in the Options menu (if you have no cross-references) or "Output Everything" (if you do).

You need to specify a XXX.

XXX here is the name of one of the miscellaneous files.

You have not given names to some miscellaneous files which are required for the kind of processing you have selected.

(1) Select a different kind of output in the Options menu which does not require the miscellaneous file XXX, or

(2) Specify a name for the miscellaneous file by clicking in the appropriate grey rectangle.

Non-silent reference has no value.

You have a reference for which there is no corresponding definition.

Check the spellings of the reference and the definition it was intended to have.

Symbol has more than one value.

You have defined a Print Merge variable which has to have different values in different places where it occurs.

Make the variable a silent reference (see section 2.2.4.)

String table overflow.
Field > 256 characters

(1) You have a very long Print Merge variable (heaven knows what you were doing!).

Break up your mammoth statement into several shorter statements.

(2) Possibly, you forgot to turn off Fast Save when you saved your Word file.

Save your Word file(s) again, being sure to turn off Fast Save.

(3) Most likely, you forgot to close one of your print merge variables with ».

Find the « which has no ».

7.3. Print Merge in Word

Unknown field name.

This is a tough one because Word doesn't deign to tell you the name of the field it did not find.

(1) You did not turn off Fast Save when you saved your Word file(s).

Save the Word file(s) with Fast Save turned off.

(2)   You haven't run the WordRef application since the last time you changed your citations or cross-references.

Run the WordRef application and choose "Compile References…" from the File menu.

(3) You left out the "#" or the "@" in a Print Merge variable you wanted WordRef to handle.

Correct them and re-run the WordRef application.

(4) You used an invalid field name in your bibliography style sheet.

You can tell if this happened, because if you leave out the `«DATA ...»` and the

«INCLUDE ...bibstyle»
lines, the problem goes away.

You need to take a close look at all the reference types in the style sheet to make sure you haven't misspelled any of the field names.

Not enough memory to complete operation.

Word was not able to assign paragraph styles styles.

If you have defined a paragraph style in your bibliography style, you can read it into the new document and set the paragraph styles manually.

8. Release Notes

8.1. Updating to the new version

Updating to the 1.3 version of WordRef is not difficult. The manuscript files are completely compatible with the new version of the WordRef application.

To update to the 1.3 version of the WordRef stack, you should choose "Write BibTeX" on the head card of the old stack with the option "Other BibTeX". Then you can open up the 1.3 version of the stack and choose "Read BibTeX". You should under no circumstances cut a card from an old version of the stack and paste into a new version.

8.2. WordRef stack

Changes in the 1.3 version:

• Visual feedback is given when the Comments or Other Fields fields are not empty.

• It is now possible to change a card from one reference type to another automatically.

• The pop-up menus have an item at the top explaining what operation is to be performed.

• Support for defining and referring to strings has been added. This includes: (1) a button to bring up the Strings field, (2) a button to read new strings from a file, (3) a button to write just the strings to a file, and (4) recognition that any field on a bibliography card that begins with a period (or full-stop, ".") refers to a string.

- The command to find duplicate keys now finds *all* duplicate keys in a single pass through the stack.

Changes in the 1.2 version:

- A couple of bugs which could cause crashes were fixed.

Changes in the 1.1 version:

- Double quotes are handled gracefully in BibTeX files and the stack.

- Carriage returns in fields no longer cause problems.

- Unknown fields are read into an "Other fields" field.

- Handles diacriticals (accents) more thoroughly in BibTeX files.

- The correct name is now displayed when reading BibTeX files if not all required fields have been filled in.

- Empty fields are now handled correctly when reading BibTeX files.

8.3. WordRef application

Changes for the 1.3 version:

- Fixed some bugs.

- Searching of bibliographies is substantially faster when the bibliography is output by the 1.3 version of the stack (or later).

Changes for the 1.2 version:

- Added the "Verbose" option to make debugging easier.

- Added citation templates to enhance customizability of citations.

- Put an example in the "Citation options…" dialog box.

- Handled the "missing author" syndrome better (see section 2.1.3).

- Fixed some bugs which could cause crashes or hangs.

Changes for the 1.1 version:

- Checks for out-of-memory conditions.

- Citations are now properly disambiguated when there are identical authors/years so that they correspond with the bibliography entried.

- With numeric tags, there are now options to sort either in citation order or alphabetical order.

• Multiple selections have been disabled in the scrolling file lists (since they didn't work).

• A bug which caused the application to hang occasionally was fixed.

8.4. WordRef Browser desk accessory

Changes for the 1.3 version:

• Initial release.

8.5. CACM.bibstyle

Changes for the 1.2 and 1.3 versions:

• None.

Changes for the 1.1 version:

• There was a misspelling in the CACM.bibstyle file distributed with the 1.0 version which prevented technical reports form working properly. The style sheet should test for equality with "techreport", not "techReport" (Word is case-sensitive in this comparison).

9. Wish List

Understand Word "Fast Save" format.

Tie citation/author styles to bibliography style sheets.

Handle capitalization of titles.

Style changes (sub and superscript at a minimum) within fields.

Be able to bypass Word's limit of 127 Print Merge fields.

More generality in citation styles allower.

Be able to search for references in the desk accessory.