

# Transforming EconLit references to BibTeX references with `elit2bib`

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The American Economic Association's online database EconLit provides economic references for download into a text file. For users of L<sup>A</sup>T<sub>E</sub>X, it is convenient to transform those references into a format that BibTeX understands. The script `elit2bib` does this.

We have completely rewritten `elit2bib` to work with the new format of EconLit records at URL [www.aeaweb.org/econlit/efm](http://www.aeaweb.org/econlit/efm). Our script, programmed in Perl 5, makes exhaustive use of the information now available at AEA/EconLit. Similar to earlier versions, the script evaluates the input and checks for possible problems in output creation. In particular, `elit2bib` warns the user of detected mistakes or inconsistencies, mostly resulting from non-standard EconLit records. This documentation describes the main characteristics of our program, how to obtain an adequate input file from AEA/EconLit and how then to apply `elit2bib` to create a BibTeX output file. The output file may still need a manual check. We programmed `elit2bib` so that it alerts the user of possible problems. For a quick overview of options and warnings, see the appendix (p. 20). The fastest introduction is probably a look at our examples in Section 5 (p. 14).

Originals are available at URL <http://econ.ucsd.edu/muendler/>. This document explains the use of `elit2bib` version 1.3.2 from April 18, 2012. This most recent version of `elit2bib` works on EconLit output that was generated after January 2011.<sup>1</sup>

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<sup>1</sup>Earlier EconLit output from WebSpirs can be transformed with legacy versions of `elit2bib` (available from URL [www.econ.ucsd.edu/muendler](http://www.econ.ucsd.edu/muendler) including respective documentation).

# 1 What `elit2bib` Can Do For You

The Perl script `elit2bib` transforms EconLit downloads of references to reference files that can be read by BibTeX and included in L<sup>A</sup>T<sub>E</sub>X. The current version

- is designed to work with the most recent structure of EconLit downloads (but no longer supports the filtered downloads through FirstSearch, Ovid, WebSpirs or Silverplatter, which frequently change);
- oversees its own output and warns users if problems are discovered; in particular, it checks for possible inconsistencies, possible mistakes, or a lack of completeness when EconLit records were reported in a non-standard manner;
- uses the line item “DT:” in EconLit (which takes values such as “Journal Article”, “Collective Volume Article”, “Book”) to transform all references to according BibTeX records in a consistent way;
- includes a variety of options to create the most appropriate output for the user’s preferred BibTeX styles;
- keeps the abstract, source information, and internet links in according BibTeX line items for convenience; these records are not going to be output in the typical reference section of the L<sup>A</sup>T<sub>E</sub>X document, but allow the user to quickly re-access broader information about a reference in the `.bib` file;
- includes an optional algorithm to create BibTeX keys;
- marks the initials of the most common proper names as capital letters, so BibTeX styles that turn non-starting letters into lower-case letters will not switch proper name initials to lower-case letters.

`elit2bib` is implemented as a Perl script, it is not available as a stand-alone routine.

In the following section, we describe how a BibTeX file can be created from AEA/EconLit input, using `elit2bib`. There are three steps. First, adequate input from AEA/EconLit needs to be downloaded.<sup>2</sup> This is explained in Sec-

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<sup>2</sup>Other online providers of EconLit (such as FirstSearch, Ovid, WebSpirs or Silverplatter, for instance) do not output in a format that the current version of `elit2bib` can process. Alternative platforms change formats frequently so we chose to base the present version of `elit2bib` on the original and expectedly less frequently changing AEA/EconLit format.

tion 2. Second, `elit2bib` can then read this input file and create an output file in BibTeX format under various options. Section 3 explains this second step. Last, and certainly not least, the output should be checked manually. We point out some concerns in Section 4. To make you familiar with `elit2bib`, we have included examples in Section 5. We have added some “asides” in the text that may be useful at a second glance, but can be skipped at a first reading.

## 2 Downloading EconLit References from the AEA

On the EconLit web page at URL [www.aeaweb.org/econlit/efm](http://www.aeaweb.org/econlit/efm), log in and start your literature search. Check the records of your search that you want to download as references. Once you have completed your search, click the button “Export” to download your results to a local file. EconLit will offer a dropdown menu under the “Export” button and offer you alternative download formats. Select “Complete Record”. EconLit will open a new browser window or tag and display the references in its own format. Copy and paste the displayed references into a text file (which we assume you call *download.dat*), or use your browser’s “Save As...” option to save the content of the browser window/tag into a text file (called *download.dat*). Any file size is fine for our script `elit2bib`.

The following example shows a typical record in a downloaded reference file from EconLit’ EconLit.

```
TI: Existence of an equilibrium for a competitive economy
AU: Arrow, K. J.; Debreu, G.
AF: Unlisted; Unlisted
SO: Econometrica, 22(0), July 1954, pp. 265-90
DT: Journal Article
PY: 1954
LA: English
UD: 201104
AN: 1192669
This record is part of the EconLit bibliographic database. Copyright(c) 2011, American
Economic Association
```

By default, our script `elit2bib` expects a file called *download.dat* to process. You may choose any file name or other extension, and later supply this different file name or extension in the command line of `elit2bib`.

**Aside 1:** The reason why it is important to choose “Complete Record” for reference downloads from AEA/EconLit is that our script requires a specific set of line items for each record to work. `elit2bib` will ignore any reference record for which DT (type of record) is not available. In other words, it is essential to have

the DT line for every reference record. A BibTeX record is going to be incomplete if TI (title), AU (authors), SO (source), PB (bibliographic citation), or PY (year) are missing from the input file. There is currently now selective download option at AEA/EconLit that would extract only the line items DT, TI, AU, SO, PB and PY. The AV (ordering information for discussion papers), and IB (ISBN/ISDN numbers) are ancillary line items mostly for convenience, and you may want to leave them out. You may also not be interested in DE (keywords), or AB (abstract). The latter are usually large line items and you could consider omitting them from your download file if file size is a concern to you. Processing time with `elit2bib` should not be strongly affected by the inclusion of such ancillary line items because our script hardly processes them at all.

**Aside 2:** As compared to EconLit records before November 2002, the line item SO is now called PB, and DS is called DE. The new line item DE mixes various keyword systems. As compared to EconLit records before January 2011, the current EconLit records use PB and SO for Collective Volume Articles in a more systematic way. The old informational line item FTEXT (URL addresses for fulltext) appears to have been dropped.

### 3 Applying `elit2bib`

The program `elit2bib` is written as a Perl script for Perl 5. You can obtain current information on Perl from *perl.com*. PC, Mac and Unix users may want to see ActiveState for the latest release.<sup>3</sup> Running Perl scripts on your computer is quite straightforward. This section describes what is needed so that you can run the script `elit2bib.pl` smoothly. In the actual `elit2bib` script, you first choose settings such as paths and file names, and options. Then you invoke `elit2bib` through Perl.

`elit2bib` processes reference records in EconLit, except Book Reviews. It transforms these EconLit records according to their DT (type of record) line item into corresponding BibTeX records. This is also shown in Table 1. To our knowledge, no other DT records than the ones listed in table 1 are used by AEA/EconLit.

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<sup>3</sup>The URL of perl is <http://www.perl.com/>, and the URL of ActivePerl for PCs at ActiveState <http://www.activestate.com/Products/ActivePerl/Download.html>.

Table 1: TRANSLATION FROM AEA/ECONLIT TO BIBTEX RECORDS

EconLit record (DT)		BibTeX record
Journal Article	→	@ARTICLE
Working Paper	→	@ARTICLE (or @TECHREPORT <sup>a</sup> )
Book	→	@BOOK
Collective Volume Article	→	@INCOLLECTION
Dissertation	→	@PHDTHESIS <sup>b</sup>
Book Review		<i>not included</i>

<sup>a</sup>If option `-t` is selected. See Section 5.3 or Appendix A.6 for details.

<sup>b</sup>EconLit does not record Master's Theses to our knowledge.

### 3.1 Before you start

Before you start using `elit2bib`, please be aware that we are distributing `elit2bib` freely under the condition that you make *no* changes to the script code without renaming the file. That is, you can alter our script, change and improve it wherever you want, but we require that you rename the file as soon as you alter any part of the code. This is common with freely distributed software. We want to avoid that “copies” of `elit2bib`, which are potentially quite unrelated to the original, start circulating. Accordingly, the ‘*license agreement*’ in the header of our script file reads:

```
# Copyright (C) 2001 all rights reserved.
#
# Copying of this file is authorized only if either
# (1) you make _no_ changes to your copy, or
# (2) if you do make any change, you name the altered file
    differently.
```

When you run the script for the first time, you have agreed to these terms.

### 3.2 Selecting the settings in `elit2bib`

As of now, `elit2bib` is not a stand-alone routine. Among other things, this implies that you need to insert manually your preferred settings in the head of the script code. This is not a big deal. Open the file `elit2bib.pl` in any text editor of your choice (such as *notepad* or *WinEdt* on a Windows PC or *emacs* or *KWrite* on a Unix computer). There are two fields in the script file

in which you need to make changes before using `elit2bib`. Both fields are marked with separators (“#---”). Point the cursor to the first field

```
#-----  
# PLEASE ENTER OPTIONS AND FILENAME HERE as $cmd  
$cmd = '-e -f -k -v download';  
#-----
```

We like to run `elit2bib` with the options `-e -f -k -v`. We will turn to these and other options in Section 3.4 below. For now we suppose that `elit2bib` should run on the input file `download.dat`. We have produced a sample file `sample.dat` and posted it at URL <http://econ.ucsd.edu/muendler/>. You can leave out the file extension `.dat` in the command line since the program assumes `.dat` to be the default extension.

The second field with settings tells `elit2bib` where to look for the input file, and where to save the output file. Point your cursor to

```
#-----  
# CHANGE PATH NAMES for input and output files HERE  
open(IN,"<c:/temp/$file.$ext") [...]  
open(OUT,">c:/temp/$file.bib") [...]  
#-----
```

a little further below, and provide `elit2bib` with the full pathname of your input and output directories. You only need to change the parts that read `<c:/temp/` and `>c:/temp/`. Our default is a temporary directory on a PC. Unix, Linux and Mac users need to adjust the path names accordingly. We believe that you need not make changes to this second field very often.

The default settings in both fields will result in the following actions of `elit2bib`. First, the program will attempt to read the file `download.dat` in directory `c:/temp/`. If it finds the file, it will translate all EconLit records to BibTeX format under options `-e -f -k -v`. Then it will write the output file to the directory `c:/temp/` and name the file `download.bib`. If the output file `download.bib` exists already, the program will overwrite the file without warning. If the script cannot locate the input file `c:/temp/download.dat` or if the output path does not exist, then `elit2bib` will abort with an according error message.

### 3.3 Running `elit2bib` on a PC or Unix computer

Having chosen the according settings, you can now execute `elit2bib` as a Perl script. Let’s suppose first that you want to run `elit2bib` on a PC with Windows and that the script file `elit2bib.pl` itself is in the directory `c:/perl/`.

We turn to Unix and Mac use below. On a PC, select “Run...” from the Windows start menu and type<sup>4</sup>

```
command.com /k perl "c:/perl/elit2bib.pl"
```

(or paste this line there). Of course, you can put the script file `elit2bib.pl` in any other directory and adjust the file reference accordingly.

A DOS window will open. If Perl cannot find the script file `elit2bib.pl` in directory `c:/perl/`, it will respond with the error message “Can’t open perl script ‘c:/perl/elit2bib.pl’: No such file or directory”. If our program `elit2bib` cannot find your specified input file (as described in Section 3.2), it will respond through Perl with the error message “Can’t open input file `download.dat`. Error at `c:/perl/elit2bib.pl` line 46.” A similar message occurs if the output path does not exist. Otherwise, `elit2bib` should run for some seconds and create a proper BibTeX output file. At first use, Perl compiles the Script code and takes a little longer. Once Perl is done with `elit2bib`, a DOS prompt appears, and you can close the window with “exit” (enter).

To play with `elit2bib`, you can use our sample file `sample.dat` at URL [econ.ucsd.edu/muendler/download/elit2bib/sample.dat](http://econ.ucsd.edu/muendler/download/elit2bib/sample.dat). You only need to save it to the right input directory (`c:/temp/` is the Windows default) and enter the file name `sample` in the header of the Perl script:

```
#-----  
# PLEASE ENTER OPTIONS AND FILENAME HERE as $cmd  
$cmd = '-e -f -k -v sample';  
#-----
```

Alternatively, you can run `elit2bib` on the DOS level directly. For this purpose, you can launch the command prompt from the start menu. Once the DOS window has opened, type

```
perl "c:/perl/elit2bib.pl"
```

Alternatively, you can use the DOS command “cd” first to change to the directory where the script file `elit2bib.pl` is located and then invoke the script directly by typing `perl elit2bib.pl`.

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<sup>4</sup>To enable the “Run...” command in the Windows 7 start menu, right click on the Windows 7 Start Menu button and select Properties, then click on Customize under the Start Menu tab, scroll down until you locate the Run Command checkbox, check the box, click Ok and Apply. When you now check your start menu, you should see the “Run...” Command

Table 2: OPTIONS IN `elit2bib`

	Function
<code>-e</code>	Transforms “et al.” string into “{et~al.}” in author=/editor= items
<code>-f</code>	Adds a File reference item (set to F) to each BibTeX record
<code>-k</code>	Creates BibTeX Keys from author=/editor= and year= items
<code>-l</code>	Leaves BibTeX keys out and inserts dummies, causing BibTeX errors
<code>-m</code>	Does <i>not</i> transform “Jan” to “January”, etc.
<code>-q</code>	Changes double quotes to single quotes in title= and booktitle=
<code>-t</code>	Translates working paper as @TECHREPORT, and not as @ARTICLE
<code>-v</code>	Uses book volume instead of number if both reported in EconLit

On a Unix computer, the syntax is similar to the DOS level command. First, change to the directory where you keep your copy of the script file `elit2bib.pl`. Then type

```
perl elit2bib.pl
```

The rest is the same as described above.

Use on an Apple Mac is similar, working with terminal windows. To open a terminal window on your Mac, go to Spotlight (in the upper right corner of your screen) and type in “terminal”. First, change to the directory where you keep your copy of the script file `elit2bib.pl`. Then type

```
perl elit2bib.pl
```

Again, the rest is the same as described above.

When you run `elit2bib` on any other input file than `sample.dat`, warning messages may be displayed in the DOS window to alert you of possible problems during the translation procedure. Section 4 explains these messages, their possible causes, and adequate actions in more detail.

### 3.4 Choosing `elit2bib` options

`elit2bib` allows you to choose among eight different options. They determine the way in which the output file is created. Table 2 provides an overview. These eight options are described in more detail in Appendix A, where we also give examples. Here, we only briefly discuss some of their uses.

**Option -e** tells `elit2bib` to transform the string “et al.” into the string “{et~al.}” whenever encountered in an `author=` or `editor=` field. This partly remedies an incompatibility between EconLit and BibTeX. EconLit generally suppresses all but the first author name if there are four or more authors. Instead, EconLit reports the alphabetically first author’s name and adds an “et al.”. Standard BibTeX styles cannot handle such records. The only clean way out is to research the remaining three or more author names and to add them manually to the BibTeX record. However, whenever you use BibTeX styles that do *not* abbreviate first names (such as *aer.bst*, for example) putting “et al.” in curly brackets makes these bibliography styles believe that an addition to the name occurs here. So, BibTeX treats the string “{et~al.}” as if it were an addition to the name such as “Jr”. This can be a suitable work-around in the cases when EconLit does not report all authors.

**Option -k** makes `elit2bib` create automatic BibTeX keys that can be used in L<sup>A</sup>T<sub>E</sub>X for referencing. Suppose the three authors of an article are “Stone, R. and Champernowne, D. G. and Meade, J. E.”. With option `-k` specified, `elit2bib` creates an automatic key “@ARTICLE{StoneChampMeade42,” for this article (which was published in 1942). You can then reference this article with the command `\cite{StoneChampMeade42}` in your L<sup>A</sup>T<sub>E</sub>X file. If you do not specify option `-k`, the keys of all articles will simply be their running numbers within the output file. So, if not specifying option `-k`, you will have to replace the running number by a key of your choice. The supporting BibTeX style *keylist.bst* helps you view the keys and the according records in L<sup>A</sup>T<sub>E</sub>X, a procedure that we describe in Appendix B.

**Option -t** translates working papers into a BibTeX record @TECHREPORT. However, the *default* in `elit2bib` is to translate a working paper into an @ARTICLE record in BibTeX. The advantage of an @ARTICLE record is that non-economic BibTeX styles such as *agsm.bst* or *amsplain.bst* will treat the record in a way that looks common to an economist. Non-economic BibTeX styles mostly make @TECHREPORT records appear as “Technical Reports” in the final L<sup>A</sup>T<sub>E</sub>X output. NBER working paper no. 0001, for example, would be quoted as “Technical Report 0001, NBER” by most non-economic bibliography styles. If option `-t` is not specified, `elit2bib` will make this NBER working paper an @ARTICLE with accordingly rearranged line items so that it would indeed appear as “NBER Working Paper 0001” in the references section of the final L<sup>A</sup>T<sub>E</sub>X output. It will be quoted in this generic way both in non-economic and economic bibliography styles. That’s also why we made it the default. On the other hand, if you are sure that you will exclusively or mainly use economic bibliography styles, you can specify option `-t`. Economic BibTeX styles such as *aer.bst* or *econometrica.bst* will make the final L<sup>A</sup>T<sub>E</sub>X reference record say

“Discussion Paper 0001, NBER,” or the like, related to what economists are used to see.

## 4 Checking the Output file

There are several incompatibilities between the way AEA/EconLit records references, and how BibTeX is used to catalog references. In addition, records in EconLit, especially its “Collective Volume Articles”, come in a variety of formats that are sometimes hard to disentangle. For these reasons, output from `elit2bib` may be incomplete, or even mistaken in some cases. We have designed `elit2bib` so that it oversees its own activity, and warns the user if it detects possible inconsistencies. Yet, even when no warnings occur, we highly recommend that you check the output file and pay special attention to all “Collective Volume Articles” (`@INCOLLECTION`) records.

### 4.1 Three remarks on how `elit2bib` avoids translation mistakes

We have designed `elit2bib` to take care of potential translation mistakes from EconLit to BibTeX. First, we perform *word transformations to avoid errors* in BibTeX. We change names of the most commonly appearing countries and of all states of the United States, when abbreviated, into forms that do not create a confusion with other types of records in a field. Similarly, we make quotation marks, ampersants and the like  $\LaTeX$  compatible, and try to identify special punctuation marks when they would affect the translation. Abbreviations such as “St.” or “Calif.”, for instance, are clear for a standard reader: “St.” is part of a name, “Calif.” is a location that specifies the address of a publisher. The punctuation, however, could be confused with the end of a string within a field, especially for a “Collective Volume Article” (`@INCOLLECTION`). So, “St.” is treated in a special way, and “Calif.” is internally replaced by “`{CA}`” in `elit2bib` but should appear as “Calif.” in final output. (The curly brackets around state abbreviations avoid that BibTeX changes upper-case to lower-case letters.) These are only some among many examples.

Second, we try to take care of *incompatibilities* between the way EconLit reports references and the form of BibTeX input. For instance, a cause of errors in BibTeX is when both a number and a volume are reported for a “Collective Volume Article” or a “Book” record in EconLit. This typically occurs when a book is published in a series, and receives a number, and when the book is

also split into more than one volume. The corresponding BibTeX categories @INCOLLECTION and @BOOK must not contain both a volume and a number. We have chosen to resolve this conflict by retaining the number of the book within the series but by removing the volume. Option `-v` allows you to retain the volume instead of the series number. A similar problem can arise with a “Journal Article” (@ARTICLE) in Brookings Papers. Since Brookings Papers are not divided into volumes but receive a number, EconLit reports a number 2 in a given year with “0(2)”, for example. After removing the zero volume, BibTeX would produce an error message that a number without a volume exists. We have resolved this problem by artificially replacing the volume with the year of publication.

Third, EconLit uses *flexible formats* for several types of records, and sometimes contains slight deviations from standards that are not problematic for a reader but can cause difficulties in an `elit2bib` translation. Some “Collective Volume Article” records, for instance, lack the addition “eds.” to the editor name in EconLit, but the reference does still allow to clearly distinguish authors from editors. Sometimes, the “eds.” remark is repeated. At other times, the author of contributions to a collective volume is repeated as editor but the “true” editor appears in the source item. Or, as opposed to a typical “Working Paper” record in EconLit, World Bank and IMF discussion papers often contain colons at unexpected positions. These and similar problems have been resolved. Please report any other apparent translation issue to the authors if you detect one.

## 4.2 Three remarks on unavoidable problems for `elit2bib`

Some features of EconLit create unavoidable problems. First, EconLit suppresses all but the first author (editor) name if there are four or more authors (editors). Instead, EconLit reports the alphabetically first author’s name and adds an “et al.”. Standard BibTeX styles cannot handle such records. The only clean way out is to research the remaining three or more author names and to add them manually to the BibTeX record. Sometimes, EconLit reports the coauthors at the end of the abstract (the AB item). Then, the coauthors can be copied manually into the `author=` (`editor=`) field in BibTeX. If that is not the case, the option `-e` can serve as a partial work-around. The option `-e` tells `elit2bib` to transform the string “et al.” into the string “{et~al.}” and to add it accordingly to the `author=` (`editor=`) field (see Section 3.4 above).

Some BibTeX styles such as *agsm.bst*, for instance, transform upper-case

words in titles and book titles into lower-case words. This is unfortunate for given names that may appear in a title. The only way to avoid this transformation is to use curly brackets and embrace the capital letters that must not be transformed. The script `elit2bib` does this automatically for frequently used geographic names (e.g. “Latin America” is automatically transformed to “Latin America”, “Pacific” to “Pacific”, “U.K.” to “UK”). However, given names of authors that appear in titles will evade `elit2bib`’s attention. These names need to be detected and treated manually (see Appendix A.5 for an example).

### 4.3 Typical warnings and their likely causes

We have designed `elit2bib` to display warning messages in the DOS command window (or Unix/Linux terminal window) as well as in the header of the output file. The messages are added as remarks to the `.bib` file so that they are ignored by BibTeX. These warnings are issued when the translation through `elit2bib` results in certain inconsistencies or empty records. `elit2bib` is designed to translate every identifiable EconLit record, no matter how severe the problem may be, but `elit2bib` reports each problematic record that it encounters while running.

In rare circumstances, non-standard references in EconLit may result in an empty `journal=` or `month=` field for a “Journal Article” (`@ARTICLE`), for instance. Or, as another rare example, the `booktitle=` field in a “Collective Volume Article” (`@INCOLLECTION`) may have remained empty or it may contain elements that do not belong to the book title. Records with these line items empty would cause error messages in BibTeX. We made sure that `elit2bib` warns you beforehand. The following list gives you an (exhaustive) overview of warning messages that you may encounter during an `elit2bib` translation. The according error messages in the DOS command (or Unix/Linux terminal) window will read:

*There were @ARTICLE records with problems. See head of output file for details.*

In the head of the BibTeX output file, you will then find the warning

*%ARTICLE records may be incomplete! Please check all records on the list. (This problem can be due to non-standard records in EconLit.)*

The message will be followed by a list of all BibTeX records for which a problem has been detected.

`elit2bib` uses the “DT:” field in EconLit to identify the type of an record (see Table 1, p. 5). If the input file does not contain any record with a “DT:” field specified, `elit2bib` will display the error

*The EconLit .dat file did not contain any DT: line.*

The output file will be empty. This problem occurs if you did not select the “Complete Record” option from the dropdown menu behind the “Export” button in AEA/EconLit. As we explained before, when you download you need to use an option that triggers a download of the line items DT (type of record), TI (title), AU (authors), SO (source), PB (bibliographic citation), and PY (year).

Should `elit2bib`, or Perl, display any other error message, then this message is most likely due to a change in the code that you made.<sup>5</sup> If the input file or the output directory that you specified do not exist, error messages as discussed in Section 3.2 occur, and `elit2bib` aborts. In all other cases, `elit2bib` does not abort but tries to perform as many translations as possible.

#### 4.4 Possible problems that elapse `elit2bib`’s attention

There are cases in which `elit2bib` may produce problematic BibTeX output that cannot be logically checked without understanding the meaning of phrases. EconLit’s “Collective Volume Article” records, for instance, do not always allow you to distinguish between the narrow series of the book, in which the article is published, and a publisher’s general series. We therefore urge you to check all `@INCOLLECTION` records in the BibTeX output by hand. Similarly, when a book is published in a series, EconLit may have erroneously interchanged number and volume. There are many different ways in which EconLit treats series of books. Again, this suggests that you check `@INCOLLECTION` records in the BibTeX output manually. Finally, author and editor names always deserve special attention. Names may contain prefixes and suffixes such as “de”, “van”, “von”, “Jr.”, and the like. Depending on both the specifics of the name and your taste, you may want or need to adjust these names manually, using curly brackets around the appropriate parts of the name so that BibTeX will treat them as a single entity when desired.

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<sup>5</sup>Please note that you are holding an inappropriate copy of the file `elit2bib.pl` if the code has been changed, unless the file was renamed.

## 4.5 Upper and lower case titles

In EconLit records from more recent years, book titles are typically reported in lower case letter whereas the titles of journal articles and book chapters are reported with initial capital letters. (This rule does not seem to consistently apply to handbook titles and chapters, however.) Earlier EconLit records, in contrast, report titles of journal articles and book chapters in lower case letters. If you desire consistent record styles over time, manual corrections will be needed.

## 5 Sample Input and Output with `elit2bib`

This section provides some examples of input and output. We are using the sample file `sample.dat`. It reflects possible searches on the AEA/EconLit database. Please remember that it is necessary to download your references with the AEA/EconLit Export option “Complete Record”.

In the following examples, we apply three types of BibTeX style files: *aer.bst*, *agsm.bst*, and *econometrica.bst*. They are available for free download at the according CTAN servers, or at URL <http://econ.ucsd.edu/muendler/>. We discuss three examples that are intended to show you the main issues when translating EconLit references to BibTeX.

### 5.1 An article in a collection

Consider the following sample record of an article in a collection.

```
TI: Conditional Logit Analysis of Qualitative Choice Behavior
AU: McFadden, Daniel
AF: Unlisted
SO: Trygve Haavelmo, James J. Heckman, Daniel L. McFadden, Robert F. Engle and Clive
    W. J. Granger, 2009, pp. 337-74
PB: Elgar Reference Collection. Pioneering Papers of the Nobel Memorial Laureates in
    Economics, vol. 3. Cheltenham, U.K. and Northampton, Mass.: Elgar
IB: 978-1-84720-839-2.
DT: Collective Volume Article
PY: 2009[1974]
ED: Vane, Howard R.; Mulhearn, Chris, eds.
DE: Single Equation Models; Single Variables: Discrete Regression and Qualitative [...]
KY: Qualitative Choice
LA: English
UD: 201007
AN: 1113737
```

As you can see from this example, `elit2bib` will have to perform most action

on the two line items SO and PB. Non-standard records in EconLit cause the most errors. Under options `-f -k -v`, the entire EconLit record is transformed into the according BibTeX record

```
@INCOLLECTION{VaneMulhea09:1,
author =      {McFadden, Daniel},
title =      {Conditional Logit Analysis of Qualitative Choice Behavior},
pages =      {337-74},
booktitle =  {Trygve Haavelmo, James J. Heckman, Daniel L. McFadden, Robert F. Engle
and Clive W. J. Granger},
publisher =  {Elgar},
year =      {2009},
editor =    {Vane, Howard R. and Mulhearn, Chris},
volume =    {},
number =    {3},
series =    {Pioneering Papers of the Nobel Memorial Laureates in Economics},
type =      {},
chapter =   {},
address =   {Cheltenham, {U.K.} and {N}orthampton, {M}ass.},
edition =   {},
month =     {},
note =     {Previously published 1974},
isbn =     {978-1-84720-839-2},
abstract =  {},
keywords =  {Single Equation Models and Single Variables: Discrete Regression and
Qualitative Choice Models and Discrete Regressors C25 and},
source =    {J},
file =     F
}
```

Option `-k` creates the BibTeX key “VaneMulhea09:1”, where “VaneMulhea09” corresponds to the volume editors’ last names and the year of publication. The “:1” extension indicates that this is the first chapter that EconLit picked from the collective volume for the download file `sample.dat`. The generic (Harvard-type) BibTeX style `agsm.bst` will display this BibTeX record as

McFadden, D. (2009), Conditional logit analysis of qualitative choice behavior, *in* H. R. Vane & C. Mulhearn, eds, ‘Trygve Haavelmo, James J. Heckman, Daniel L. McFadden, Robert F. Engle and Clive W. J. Granger’, number 3 *in* ‘Pioneering Papers of the Nobel Memorial Laureates in Economics’, Elgar, Cheltenham, U.K. and Northampton, Mass., pp. 337–74. Previously published 1974.

## 5.2 A journal article

Consider the following sample record of an article in an academic journal.

```

TI:  A contribution to the theory of economic growth
AU:  Solow, R. M.
AF:  Unlisted
SO:  Quarterly Journal of Economics, 70(0), February 1956, pp. 65-94
DT:  Journal Article
PY:  1956
LA:  English
UD:  201104
AN:  1204629

```

Under options `-e -f -k`, the entire EconLit record is transformed into the according BibTeX record

```

@ARTICLE{Solow56-a,
author = {Solow, R. M.},
title = {A contribution to the theory of economic growth},
journal = {Quarterly Journal of Economics},
year = {1956},
volume = {70},
number = {0},
pages = {65-94},
month = {February},
note = {},
abstract = {},
keywords = {},
source = {},
file = F
}

```

Option `-k` creates the BibTeX key ‘Solow56-a’, where the ‘-a’ is added because there is more than one record with ‘Solow56’ in the EconLit file `sample.dat`. The BibTeX style `agsm.bst` then creates the L<sup>A</sup>T<sub>E</sub>X record

Solow, R. M. (1956*a*), ‘A contribution to the theory of economic growth’,  
*Quarterly Journal of Economics* **70**(0), 65–94.

The year of publication (1956*a*) is automatically augmented by a qualifier *a* because there are two Solow articles in the sample EconLit file.

Now consider a sample record of a journal article in a professional journal with multiple authors.

```

TI:  A Characterization of Community Excess Demand Functions
AU:  McFadden, Daniel L., et al.
AF:  Unlisted
SO:  Journal of Economic Theory, 9(4), December 1974, pp. 361-74
IS:  0022-0531
AV:  http://www.sciencedirect.com/science/journal/00220531
DT:  Journal Article
PY:  1974
LA:  English
UD:  199006
AN:  0079365

```

In this example, more than three authors have written the article. EconLit

suppresses all but the first author. Under options `-e -f -k`, the entire EconLit record is transformed into the according BibTeX record

```
@ARTICLE{McFadd74,
author = {McFadden, Daniel L. {et al.}},
title = {A Characterization of Community Excess Demand Functions},
journal = {Journal of Economic Theory},
year = {1974},
volume = {9},
number = {4},
pages = {361-74},
month = {December},
note = {},
abstract = {},
keywords = {},
source = {http://www.sciencedirect.com/science/journal/00220531},
file = F
}
```

Option `-k` creates the BibTeX key “McFadd74”, where no additional “-a” is added this time because the other reference with McFadden as an author in the EconLit file `sample.dat` appeared in a collective volume so that that BibTeX key is based on editors. Since option `-e` was specified, the “et al.” terms are surrounded by curly brackets. The classic American Economic Review BibTeX style `aer.bst` creates the L<sup>A</sup>T<sub>E</sub>X record

**McFadden, Daniel L. et al.**, “A Characterization of Community Excess Demand Functions,” *Journal of Economic Theory*, December 1974, 9 (4), 361–74.

In contrast, the Econometrica BibTeX style `econometrica.bst` will display this BibTeX record as

MCFADDEN, D. L. E. (1974): “A Characterization of Community Excess Demand Functions,” *Journal of Economic Theory*, 9(4), 361–74.

In general, the “et al.” record will lead to an incorrect reference in any BibTeX style that abbreviates first names. If the option `-e` had not been specified, the author quote under the `econometrica.bst` style would have become “MCFADDEN, D. L. E. A.”—not much better. Therefore the only clean way to create correct BibTeX records when EconLit cuts the author list is to research the names of the remaining authors, and to add them manually.

### 5.3 A working paper

Consider a sample working paper record.

```

TI: Education, Information, and Efficiency
AU: Welch, Finis
AF: Unlisted
SO: National Bureau of Economic Research, Inc, NBER Working Papers: 0001, 1973, pp.
AV: http://www.nber.org/papers/w0001.pdf
DT: Working Paper
PY: 1973
LA: English
CR: Information provided in collaboration with the RePEc project (http://repec.org)
UD: 200404
AN: 0722155

```

Under options `-f -k`, the according BibTeX record becomes

```

@ARTICLE{Welch73,
author = {Welch, Finis},
title = {Education, Information, and Efficiency},
journal = {{NBER} Working Paper},
note = {},
year = {1973},
volume = {0001},
month = {},
abstract = {},
keywords = {},
source = {http://www.nber.org/papers/w0001.pdf},
file = F
}

```

Here, the source is the web address where the working paper can be downloaded. For more recent EconLit records of NBER working papers, the `elit2bib` script also adds the abstract to the BibTeX output. Note that `elit2bib` always reduces “National Bureau of Economic Research” to “NBER” for consistency across records. Moreover, “NBER” will be properly displayed and not reduced to lower-case letters since `elit2bib` has automatically surrounded the term by curly brackets. Similar adjustments are made for C.E.P.R. discussion papers.

Let’s focus on the type of record, however. As opposed to the BibTeX standard, the default in `elit2bib` is *not* to create a `@TECHREPORT` record but an `@ARTICLE`. The reason is that generic (Harvard-type) BibTeX styles such as `agsm.bst` will now produce a record

Welch, F. (1973), ‘Education, information, and efficiency’, *NBER Working Paper* **0001**.

Note that the addition “Working Paper” would be made by `elit2bib` automatically, even if the according SO item in the input file did not contain it.

On the other hand, if you had specified the option `-t` when creating the output file, `elit2bib` would have recorded a `@TECHREPORT` record in the output file. Then, a generic BibTeX style such as `agsm.bst` will produce the L<sup>A</sup>T<sub>E</sub>X reference

Welch, F. (1973), Education, information, and efficiency, Technical Report 0001, NBER.

There is no way to avoid the “Technical Report” term. Since we wrote `elit2bib` mostly for users who are economists and thought that they might still want to use generic BibTeX style files from time to time, we made an accordingly adjusted `@ARTICLE` record the default.

However, there may still be some reason why even an economist may prefer to use the `-t` option. Suppose the economist is sure that she would never use a generic BibTeX style file but only styles such as in *Econometrica* (`econometrica.bst`). When the option `-t` is *not* specified, the `elit2bib` output in L<sup>A</sup>T<sub>E</sub>X will become

WELCH, F. (1973): “Education, Information, and Efficiency,” *NBER Working Paper*, 0001.

Otherwise, if the option `-t` *is* specified, the reference will read

WELCH, F. (1973): “Education, Information, and Efficiency,” Discussion Paper 0001, NBER

Again, the term “Discussion Paper” is the standard (for *Econometrica* `econometrica.bst`) and cannot be altered. If you prefer the second result and can be sure to never use generic style files, you may indeed want to specify the `-t` option.

For a comparison, when the `-t` option is *not* specified the American Economic Review style (`aer.bst`) will produce

**Welch, Finis**, “Education, Information, and Efficiency,” *NBER Working Paper*, 1973, 0001.

When the `-t` option *is* specified, the result in the L<sup>A</sup>T<sub>E</sub>X references will be

**Welch, Finis**, “Education, Information, and Efficiency,” Technical Report 0001, NBER 1973.

As can be seen from the comparison, even some economic BibTeX style files may not treat `@TECHREPORT` records the way you want. This is another reason why we made it the default that working papers are turned into (accordingly adjusted) `@ARTICLE` records in BibTeX.

# Appendix

## A The Options

The following options are supported in the current version of `elit2bib`.

	Function
<code>-e</code>	Transforms “et al.” string into “{et~al.}”
<code>-f</code>	Adds a File reference item (set to F) to BibTeX records
<code>-k</code>	Creates BibTeX Keys from author=/editor= and year= items
<code>-l</code>	Leaves BibTeX keys out and inserts dummies, causing errors
<code>-m</code>	Does <i>not</i> transform “Jan” to “January”, etc.
<code>-q</code>	Changes double quotes to single quotes
<code>-t</code>	Translates working paper as @TECHREPORT, not as @ARTICLE
<code>-v</code>	Uses book volume instead of number if both reported in EconLit

The following subsections discuss these 8 options in more detail.

### A.1 Option `-e`

**Option `-e`** is also described in Section 3.4. This option tells `elit2bib` to transform the string “et al.” into the string “{et~al.}” whenever encountered in an author= or editor= field. This partly remedies an incompatibility between EconLit and BibTeX. EconLit generally suppresses all but the first author name if there are four or more authors, only reporting the alphabetically first author’s name and adding an “et al.”. Standard BibTeX styles cannot handle such records. The only clean way out is to research the remaining three or more author names and to add them manually to the BibTeX record. Whenever you use BibTeX styles, however, that do *not* abbreviate first names (such as *aer.bst*, for example), putting “et al.” in curly brackets makes these bibliography styles believe that an addition to the name occurs here. So, BibTeX treats the string “{et~al.}” as if it were an addition to the name such as “Jr”. This can be a suitable work-around in the cases when EconLit does not report all authors and the used BibTeX package does not abbreviate first names.

## A.2 Option -f

**Option -f** adds the file reference field `file=` to every BibTeX record. If you wish to use the `file=` field in your BibTeX (`.bib`) libraries, `elit2bib` can provide the according field. In order to make use of it, however, you need to manually replace the default record “F” (‘false’ for file not available) with a proper file reference.

## A.3 Options -k and -l

**Option -k** is also described in Section 3.4. This option makes `elit2bib` create automatic BibTeX keys that can then be used directly in the L<sup>A</sup>T<sub>E</sub>X file for referencing. Say the two authors of an article are “Mortensen, Dale T.; Pissarides, Christopher A.”, then option `-k` has `elit2bib` create an automatic key “@ARTICLE{MortenPissar94,” for this article (which was published in 1994). You can reference this article with the command `\cite{MortenPissar94}` in your L<sup>A</sup>T<sub>E</sub>X file. If you do not specify option `-k`, the keys of all articles will simply be their running numbers within the output file. So, if not specifying option `-k`, you will have to replace the running number by a key of your choice. The supporting BibTeX style `keylist.bst` helps you view the keys and the according records in L<sup>A</sup>T<sub>E</sub>X, a procedure that we describe in Appendix B.

By default, keys are created from the authors’ or editors’ names and the year of publication. There are several examples for BibTeX keys in the text. On pages 15, 16 and 17, for instance, we explain how the option `-k` works. In the first example, option `-k` creates the BibTeX key “VaneMulhea09:1” from the editors’ lanames Vane and Mulhearn, Chris and the year of publication of the collective volume, 1996. The “:2” is added because this is the second article (chapter) that EconLit picked from the same collective volume (within the file `mcfadden.dat`). In the second example, option `-k` creates the BibTeX key “McFadd74-b” from the author’s name McFadden and the year of publication 1974. The “-b” is added because there is more than one record with “McFadd74” in the EconLit file (`mcfadden.dat`).

If you are sure that you want to create all BibTeX records manually, and you also want to be sure not to forget a single key, you can specify option `-l`. Whenever you then run BibTeX on the output file, you receive an error message until you remove every single error dummy (an open rectangle in ASCII) from the output file.

## A.4 Option -m

**Option -m** transforms abbreviations of the months (or seasons) into their full-length form. EconLit reports some but not all months as abbreviations. To make reporting uniform in BibTeX, you can use the option `-m` to conduct the following transformations: “Jan.” to “January”, “Feb.” to “February”, and so forth, as well as “Sept.” (or “Sep.”) to “September”, “Win.” to “Winter” and “Sum.” to “Summer.”

## A.5 Option -q

**Option -q** changes double quotes in titles (`title= field`) or book titles (`booktitle= field`) to single quotes. This can be useful if you anticipate to use certain BibTeX styles for sure and want to avoid colliding double quotes.

Consider the following artificial EconLit record of a journal article for illustration.

```
TI: Title with "Double Quotes"
AU: Author, Firstname
AF: Unlisted
SO: Redundancy Journal of Redundancy, 1(2), 1901, pp. 1-2
DT: Journal Article
PY: 1901
LA: English
UD: 123456
AN: 1234567
```

The BibTeX style *econometrica.bst* produces references that place the article title in double quotes. Without the `-q` option in `elit2bib`, the final reference displays in L<sup>A</sup>T<sub>E</sub>X as

AUTHOR, F. (1901): “Title with “Double Quotes”,” *Redundancy Journal of Redundancy*, 1(2), 1-2.

In contrast, with the option `-q` turned on in `elit2bib`, the final L<sup>A</sup>T<sub>E</sub>X reference becomes

AUTHOR, F. (1901): “Title with ‘Double Quotes’,” *Redundancy Journal of Redundancy*, 1(2), 1-2.

The BibTeX style *agsm.bst* produces references that place the article title in single quotes. Without the `-q` option in `elit2bib`, the final reference displays in L<sup>A</sup>T<sub>E</sub>X as

Author, F. (1901), ‘Title with “quotes”’, *Redundancy Journal of Redundancy* **1**(2), 1–2.

In contrast, with the option `-q` turned on in `elit2bib`, the final L<sup>A</sup>T<sub>E</sub>X reference becomes

Author, F. (1901), ‘Title with ‘double quotes’’, *Redundancy Journal of Redundancy* **1**(2), 1–2.

The choice of option `-q` is a matter of taste and depends on the most frequently used BibTeX style file (bst).

## A.6 Option `-t`

**Option `-t`** is also described in Section 3.4. This option translates working papers into a BibTeX record `@TECHREPORT`. The *default* in `elit2bib` is to translate a working paper into an `@ARTICLE` record in BibTeX.

The advantage of an `@ARTICLE` record is that non-economic BibTeX styles such as *agsm.bst* or *amsplain.bst* will treat the record in a way that looks common to an economist. We expect most `elit2bib` users to be economists, possibly using non-economic BibTeX styles. Non-economic BibTeX styles mostly make `@TECHREPORT` records appear as “Technical Reports” in the final L<sup>A</sup>T<sub>E</sub>X output. NBER working paper no. 0001, for example, would be quoted as “Technical Report 0001, NBER” by most non-economic bibliography styles. If option `-t` is not specified, `elit2bib` will make this NBER working paper an `@ARTICLE` with accordingly rearranged line items so that it would indeed appear as “NBER Working Paper 0001” in the references section of the final L<sup>A</sup>T<sub>E</sub>X output. It will be quoted in this generic way both in non-economic and economic bibliography styles. That’s why we made it the default. On the other hand, if you are sure that you will exclusively or mainly use economic bibliography styles, you can specify option `-t`. Economic BibTeX styles such as *aer.bst* or *econometrica.bst* will make the final L<sup>A</sup>T<sub>E</sub>X reference record say “Discussion Paper 0001, NBER,” or the like, as economists are used to see it.

In Section 5.3, we discuss the treatment of a sample working paper and repeat this discussion here. While it is the BibTeX standard to make a `@TECHREPORT` out of a working paper, the default in `elit2bib` is not to create an adjusted `@ARTICLE` record. Then a generic (Harvard-type) BibTeX styles such as *agsm.bst* will produce a record

generic (Harvard-type) BibTeX styles such as *agsm.bst* will now produce a record

Welch, F. (1973), ‘Education, information, and efficiency’, *NBER Working Paper 0001*.

Note that the addition “Working Paper” would be made by `elit2bib` automatically, even if the according SO item in the input file did not contain it.

On the other hand, if you had specified the option `-t` when creating the output file, `elit2bib` would have recorded a `@TECHREPORT` record in the output file. As a result, a generic BibTeX style such as *agsm.bst* would produce the L<sup>A</sup>T<sub>E</sub>X reference

Welch, F. (1973), Education, information, and efficiency, Technical Report 0001, NBER.

There is no way to avoid the “Technical Report” term. Since `elit2bib` is written mostly for economists, we made an accordingly adjusted `@ARTICLE` record the default.

However, there can be reasons why an economist may prefer to use the `-t` option. Suppose the economist is sure that she would never use a generic BibTeX style file but only styles such as in *Econometrica* (*econometrica.bst*). When the option `-t` is *not* specified, the `elit2bib` output in L<sup>A</sup>T<sub>E</sub>X will become

WELCH, F. (1973): “Education, Information, and Efficiency,” *NBER Working Paper*, 0001.

Otherwise, if the option `-t` *is* specified, the reference will read

WELCH, F. (1973): “Education, Information, and Efficiency,” Discussion Paper 0001, NBER

Again, the term “Discussion Paper” is the standard (for *Econometrica* *econometrica.bst*) and cannot be altered. If you prefer the second result and can be sure to never use generic BibTeX style files, you may indeed want to specify the `-t` option.

For a comparison, when the `-t` option is *not* specified the American Economic Review style (*aer.bst*) will produce

**Welch, Finis**, “Education, Information, and Efficiency,” *NBER Working Paper*, 1973, 0001.

When the `-t` option *is* specified, the result in the  $\LaTeX$  references will be

**Welch, Finis**, “Education, Information, and Efficiency,” Technical Report 0001, NBER 1973.

As can be seen from the comparison, even some economic BibTeX style files may not treat `@TECHREPORT` records the way you want—another reason why we made it the default that working papers are turned into (accordingly adjusted) `@ARTICLE` records in BibTeX.

## A.7 Option `-v`

**Option `-v`** makes `elit2bib` use the book volume instead of number if both a volume and a number are reported in EconLit. EconLit is not entirely consistent in its use of “No.” and “Vol.” references. BibTeX, on the other hand, does not allow to quote both a number and a volume for a given record (an error would result). This can pose a problem.

Consider the following sample record of a book.

```
TI: Handbook of econometrics. Volume 4
AU: Engle, Robert F.; McFadden, Daniel L., eds.
PB: Handbooks in Economics, vol. 2. Amsterdam; London and New York: Elsevier,
    North-Holland, 1994, pp. xxvi, 2111-3155
IB: 0-444-88766-0
DT: Book
PY: 1994
AB: Volume 4 of a four-volume set designed to [...]
DE: Mathematical and Quantitative Methods: General C00; [...]
LA: English
UD: 199503
AN: 0347573
```

There appear two instances of a volume. One is a book number (volume 4) and most suitably assigned to the `number=` field in BibTeX. The other reference refers to the volume within a handbook series (volume 2) and is most suitably assigned to the `volume=` field. That is what `elit2bib` does in principle. However, BibTeX does not support simultaneous records in the `number=` and the `volume=` fields for `@BOOK` references. So, a choice needs to be made as to which of the two records to keep. Different BibTeX styles respond differently to the two possible alternatives. `elit2bib` allows for a choice with the `-v` option.

There are two ways to translate this sample record into a BibTeX reference. By default and without specifying the option `-v`, the number of the book within a volume is considered most important and `elit2bib` translates the record as

```

@BOOK{EngleMcFadd94,
  editor = {Engle, Robert F. and McFadden, Daniel L.},
  title = {Handbook of econometrics},
  publisher = {Elsevier, {N}orth-{H}olland},
  year = {1994},
  volume = {},
  number = {4},
  series = {Handbooks in Economics},
  address = {Amsterdam, London and New York},
  edition = {},
  month = {},
  note = {},
  isbn = {0-444-88766-0},
  abstract = {Volume 4 of a four-volume set designed to [...]},
  keywords = {Mathematical and Quantitative Methods: General C00 [...]},
  source = {},
  file = F
}

```

Based on this record, the BibTeX style *agsm.bst* creates the reference

Engle, R. F. & McFadden, D. L., eds (1994), *Handbook of econometrics*, number 4 in ‘Handbooks in Economics’, Elsevier, North-Holland, Amsterdam, London and New York.

while BibTeX style *aer.bst* yields

**Engle, Robert F. and Daniel L. McFadden, eds**, *Handbook of econometrics* number 4. In ‘Handbooks in Economics.’, Amsterdam, London and New York: Elsevier, North-Holland, 1994.

With the option `-v` specified, in contrast, the volume within the broader series prevails over the book number and the record becomes

```

@BOOK{EngleMcFadd94,
  [...]
  volume = {2},
  number = {},
  [...]
  file = F
}

```

The BibTeX style *agsm.bst* creates the reference

Engle, R. F. & McFadden, D. L., eds (1994), *Handbook of econometrics*, Vol. 2 of *Handbooks in Economics*, Elsevier, North-Holland, Amsterdam, London and New York.

while BibTeX style *aer.bst* yields

**Engle, Robert F. and Daniel L. McFadden, eds**, *Handbook of econometrics*, Vol. 2 of *Handbooks in Economics*, Amsterdam, London and New York: Elsevier, North-Holland, 1994.

## B Output with the BibTeX style *keylist.bst*

The BibTeX style *keylist.bst* is an auxiliary style file. It reports the BibTeX keys along with full references so that the user can easily locate references for citations.

Suppose `elit2bib` created the file `sample.bib` from the EconLit sample file `sample.dat`.<sup>6</sup> You may now want to see an alphabetical list of all BibTeX keys that were assigned through `elit2bib`'s `-k` option. The following small L<sup>A</sup>T<sub>E</sub>X document, based on the BibTeX style *keylist.bst*, creates an alphabetical list of the BibTeX keys.

```
\documentclass[12pt]{article}
\usepackage{harvard}
\begin{document}
\title{{\tt elit2bib}:
      bib-file processing with {\it keylist.bst}}
\date{today}%
\maketitle
\{\small
\bibliographystyle{keylist}
\bibliography{sample}
\nocite{*}
}%
\end{document}
```

The first EconLit sample record in `sample.dat` is

```
TI:  The Market for 'Lemons':  Quality Uncertainty and the Market Mechanism
AU:  Akerlof, George A.
AF:  Unlisted
SO:  Quarterly Journal of Economics, 84(3), August 1970, pp.  488-500
IS:  0033-5533
AV:  http://www.mitpressjournals.org/loi/qjec
DT:  Journal Article
PY:  1970
LA:  English
UD:  199006
AN:  0058618
```

With the BibTeX style *keylist.bst*, the according BibTeX record is displayed as

---

<sup>6</sup>The sample file `sample.dat` is available from <http://econ.ucsd.edu/muendler/>.

[Akerlo70]

G. A. Akerlof. The market for 'lemons': Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, **84**, (3), 488–500, August 1970.

## C Warnings and Error Messages

The following list of warnings and error messages is exhaustive. If you encounter any other error message, the code of your copy of `elit2bib.pl` must have been modified. If the file has been changed but not been renamed, you are holding an inadequate copy under our copyright statement, unless you rename the file.

Message	Cause
<i>Can't open perl script</i>	You have provided a wrong path for the file <code>elit2bib.pl</code> at the Unix or Windows-DOS prompt. See Section 3.3
<i>Can't open input file</i>	You have either provided a wrong path for the input file, or a wrong name or extension of the input file. See Section 3.2
<i>Can't open output file</i>	You have provided a wrong path for the output file. See Section 3.2
<i>There were @TYPE records with problems</i>	<code>elit2bib</code> detected a problem during translation. Please check the head of the output ( <code>.bib</code> ) file for a list of problematic records. See Section 4.3
<i>The EconLit .dat file did not contain any DT: line.</i>	<code>elit2bib</code> encountered no appropriate EconLit record. Please select the “Complete Record” option in AEA/EconLit when downloading through “Export”. See Section 2
Any other	Your copy of <code>elit2bib.pl</code> is likely to contain wrong code. Please obtain an original. See page 1