

Zotero

A GUIDE FOR LIBRARIANS,
RESEARCHERS AND EDUCATORS

by Jason Puckett

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Table of Contents

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Acknowledgments	v
Introduction	vii
CHAPTER 1. About Zotero	1
CHAPTER 2. Setting Up	19
CHAPTER 3. Creating Your Library	29
CHAPTER 4. Creating Bibliographies And Writing With Zotero	63
CHAPTER 5. Zotero Online	83
CHAPTER 6. Teaching Zotero	113
CHAPTER 7. Supporting Zotero	145
About the Author	159

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Introduction

A few years ago I was working as a reference and instruction paraprofessional in an academic library. Among other things, I was the library's EndNote instructor and was (and am) a great fan of citation management software. In the evenings I was taking online graduate classes in library science, so I was also a student actively writing papers on a regular basis.

I had been regularly using EndNote, but had a laptop running the Linux operating system, which is incompatible with EndNote. I had been hearing about Zotero (zotero.org) for a few months, and installed it to try out since it worked with Linux and the OpenOffice word processor.

I was startled at how much easier it was to use than EndNote, and it quickly became my citation manager of choice. I began putting Zotero workshops on the library schedule alongside the EndNote ones, and found that students picked up the essentials of Zotero much faster and seemed more confident using it.

I use Zotero in my personal research, to save and organize sources for current and future projects, and to create bibliographies in any of the three word processors I use regularly. I use it to keep track of interesting books I want to read eventually (I have a Zotero collection of titles instead of a stack of books on my nightstand). I keep my Zotero library simultaneously on my Windows desktop at work, my Linux netbook at home, and online at the Zotero website. I'm using it as I write this book. I'm really not sure how I coped without it.

I've been a Zotero "evangelist" at two different libraries now, and it's extraordinarily rare that I encounter a student or professor who doesn't like it. I regularly incorporate a Zotero section into my information literacy class sessions, and I find I can teach the essentials in just a few minutes if that's all the time I have available. I also teach in-person and online workshops, and I get requests to give Zotero classes for courses from first-year composition to PhD seminars.

Several times a week I get Zotero support questions by email, instant message or via drop-in referrals at the reference desk. These are usually basic requests for a quick walkthrough of installing Zotero and saving citations, but can be almost anything. I have been called on to help professors set up shared libraries for their research assistants, troubleshoot odd technical problems, and on occasion explain what a web browser is to truly novice researchers.

How to Use this Book

Reference and instruction librarians like myself concern ourselves with library users' "information needs." Much of our professional activity is centered around determining what information a researcher requires (not always as easy as it sounds!) and connecting them with that information in a form they can use. I've thought a lot about the information needs of my potential readers as I planned this book.

Naturally I hope that everyone who picks up the book will read it through, but I've written it with a few different audiences in mind: researchers who just need a how-to guide to help them make bibliographies, instruction librarians and teachers using Zotero in conjunction with classes doing research assignments, and reference librarians and tech support staff who are helping users with Zotero questions and problems.

If you're "just" a researcher using Zotero, you should read chapter 1 if you have no idea what Zotero is for, but would probably be fine skipping ahead to chapter 2. The essentials for beginning users are in chapters 2 through 4. Definitely take a look at the information about synchronizing in chapter 5; it's handy for automatically backing up your library and accessing it easily from multiple computers.

If you're teaching Zotero workshops or providing Zotero support for a library or IT department, read the whole book. Chapters 6 and 7, about teaching and supporting Zotero, might be particularly useful.

If you're a librarian or educator using Zotero as a research tool in your academic classes, read the whole book with particular attention to the discussion of teaching in chapter 6. Chapter 7 may have some useful ideas for you.

What this Book Doesn't Cover

This book is written for users and teachers of Zotero, not developers or systems librarians. I won't be covering what I loosely think of as "programmer stuff." (That phrase should give you an idea of my qualifications as a programmer, i.e. none.)

To be a little more specific and less tongue-in-cheek, this book doesn't include topics like:

- writing site translators to allow Zotero to interpret metadata from your website
- creating Zotero plugins
- making your website compatible with Zotero by adding meta-data

If you're interested in these topics and related ones, I'll refer you to the Zotero developer documentation at zotero.org/support/dev/start, and to the Zotero forums at forums.zotero.org.

My System

Zotero was designed to run on any operating system that will run the Firefox web browser (and now with Chrome and Safari, with a version for Internet Explorer coming soon). Its word processor plugins work with Microsoft Word, OpenOffice and NeoOffice. Most of what I cover is OS-agnostic: it will work the same way no matter what kind of computer you're using. However, I'm making an assumption up front that most people will be using Zotero for Firefox in the Windows OS, with Word 2007 as their word processor of choice. Unless I specify otherwise, you can usually safely assume that that's the setup I'm describing.

Fortunately, Zotero usually behaves consistently between different operating systems and even word processors: I have no trouble shifting mental gears and sharing files between Windows/Word at work and Linux/OpenOffice at home. I'm aware (for example) that MacOS may require a control-click instead of a right-click to bring up a context menu, but it's awkward to write "right-click or control-click" in every such case, so when it makes a difference I'm going with Windows. MacOS and Linux users are probably used to that assumption anyway.

At press time, I was using the following software for writing and testing:

- Zotero 2.1, the most recent version
- Windows XP on my office computer and Ubuntu Linux on my home netbook
- OpenOffice/Word 2007/Google docs
- Firefox version 4.0
- The alpha/test version of Standalone Zotero

I don't use MacOS myself, but whenever possible I imposed on Mac-Zotero-using friends to double-check my work and make sure I wasn't making any errors. Any mistakes that remain are my fault, not theirs.

At press time, Standalone Zotero—the version that works with Safari and Chrome—was in “alpha” stage, an early test version. I made the choice to be slightly less specific about the details of installing Standalone, since the alpha version is a bit rough and I expect you to be using a more sophisticated installer than the one I did.

The Word “Library”

I use “library” with two meanings in this book. The first sense you're familiar with: the big building with all the books that constitutes the heart and soul of the university campus, and provides students and faculty with all the databases, research tools, information literacy teaching, and excellent support and service they need for their research. (Yes, I'm proud to be a librarian.)

The second sense may be new to you if you haven't used reference manager software before. When you save a reference (like a book or article citation) using a program like Zotero, it goes into your personal collection of information on your hard drive or on the web. Most reference managers, including Zotero, call this your “library.” This is the kind of library I'll be discussing most of the time, obviously. I think the distinction should be clear from context when I refer to the other kind.

Changes Happen

Any book about software inevitably starts to show its age even before it makes it to the shelf. Zotero changes and improves frequently: that's one of the things I appreciate about it. Depending on when you read

this book there will no doubt be new Zotero versions with new features not covered here. I still expect this guide to remain useful for some time to come, however.

My experience with Zotero for the last several years indicates that their development path has stabilized along the lines of adding new features, but not making major changes to existing ones. That is, Zotero 2.0 introduced new features (syncing, group libraries and so on) that added new capabilities, but the basic save citation/create bibliography functions work almost exactly the same and wouldn't baffle a Zotero 1.0 user. (In contrast with, say, the struggle we all had adjusting from Word 2003 to 2007.) As far as I know, from my vantage point as an educator who talks to the Zotero developers from time to time, that's the road map for projected versions. In other words, I expect that this will still be a useful guide for the features that I do cover here even as new ones appear over time.

Also, this isn't just a software how-to manual, though the first part of the book is mostly that. I'll also be discussing my (and others') experience, recommendations and best practices for teaching and supporting Zotero. I expect and hope that that material will all remain relevant for years yet.

Finally, I maintain a Zotero guide for Georgia State University Library at research.library.gsu.edu/zotero. I keep it as up-to-date as I possibly can when new features are released, and post answers to our most frequently asked Zotero questions. The guide is licensed under Creative Commons, so you may also copy it and adapt it for your own institution as long as you credit me and GSU Library.

The name Zotero comes from an Albanian verb, *zotëroj*, meaning to master or acquire a skill. I hope this book will be a useful means for you to master whatever level of Zotero expertise you need.

CHAPTER 1 **About Zotero**

Let's start with the most basic question.

What's Zotero?

Zotero is a reference manager program. It exists either as an add-on for the Firefox web browser, a separate program, or both. It allows researchers to save references from library catalogs, research databases and other websites with a single click. It runs constantly as a plugin in the web browser, which has perhaps become our most essential research tool, so it is always available. It collects saved citations into a personal "library," making them easy to organize and search for later use. A few clicks can turn references in the Zotero library into a bibliography in well over a thousand bibliographic styles. It automatically backs up citations and files to the cloud, making the library accessible from any computer but fully functional offline too.

The 20th-century tool for writers was the typewriter; its 21st-century counterpart is the word processor. In the same way, if a 20th-century tool for researchers was the index card scribbled with citation notes, its 21st-century equivalent is Zotero. It is a personal digital library for the modern researcher: searchable, idiosyncratic to individual needs, shareable, available online and offline. Zotero is free, easy to learn for researchers of all experience levels, powerful, flexible, and quickly becomes an essential part of the researcher's workflow.

There are many programs, called reference management software or reference/citation/bibliography managers, which perform similar functions for the researcher: saving citations, making bibliographies, storing and organizing digital documents. (I'll usually use the generic term "reference manager" when I'm speaking of these tools. In my mind this term includes not only the sense of "reference" as in a works cited list or bibliography, but also as in building and accessing a personal reference collection.) Commercial software in this genre includes End-Note, RefWorks and Procite. They range in function from simplistic to

highly technical, in accessibility from effortless to baffling, and in cost from free to hundreds of dollars, or thousands for campus site licenses. I'll attempt to illustrate below what places Zotero among the best of the lot and where it falls on the scales I just laid out. (Short answers: powerful, easy, free.)

Every researcher and every student should use a reference manager program of some kind. Every librarian and every teacher should at least be familiar with reference managers, if not for their own research then so they can understand the tools available to their students and users. Zotero and software like it is no less a research tool than library catalogs, article databases and digital repositories are, and we owe it to our students to show them the best tools for the job.

A Very Brief History: Who Makes Zotero and Why

Zotero is made by researchers for researchers. George Mason University's Center for History and New Media (chnm.gmu.edu) in Fairfax, VA created and develops Zotero. CHNM creates and uses technology tools for education and scholarship in history and the humanities. Zotero is just one of their many projects.

CHNM's team became frustrated with the limitations of commercial reference managers, finding them difficult to use with many catalogs and databases. At the same time, they recognized the opportunity that the open-source web browser Firefox provided. Firefox is designed to allow programs called "add-ons" to augment the way it works, adding new features not intended by the Firefox developers. Add-ons can allow the browser to do seemingly almost anything: save screenshots, control media players, stifle annoying advertisements, or in Zotero's case store bibliographic references. Firefox was the first platform for which Zotero was developed; support for other browsers was first added in early 2011.

They had also noticed a trend in several academic libraries to offer a feature called something like "My Backpack," providing students with online storage space to create personal collections of useful resources. The CHNM team combined these ideas to create a tool that would: run in the browser, which researchers used constantly; work well with

a diverse range of databases, catalogs and repositories; and provide a unified "backpack"-style space for users to save their references.

Zotero has received grant support from the Andrew Mellon Foundation, the Alfred P. Sloan Foundation, and the Institute of Museum and Library Services. It has won awards from *PC Magazine*, Northwestern University's CiteFest competition, and the American Political Science Association.

Open-source Software

Zotero is open-source software. This means that the source code—the structure of the Zotero software itself—is available for anyone to download, look at and redistribute freely. Anyone with the requisite knowledge can examine the internal workings of an open-source program, learn how it is made and potentially contribute changes to future versions. Many widely used programs are created under the open-source model: the Firefox web browser, the Linux operating system, the Apache web server (the most widely used web server on the internet), and the OpenOffice application suite, just to name a few examples.

Software made and distributed in this way is also called "free software." This label is slightly ambiguous because of the meanings of the word "free" in English. It can mean "without cost" (*gratis*) or "free to copy and re-use" (*libre*). Some advocates have adopted the acronym FLOSS, "free/libre/open source software" to clarify the meaning. Zotero is FLOSS: "free" in both senses of the word.

Why does all this matter to you as a researcher, teacher or librarian? Several reasons. The first one is obvious: it's free as in *gratis*, no cost, they're giving it away. In the free software community this sense of "free" is called "free as in beer": if a friend gives you a beer just because they're your friend, it costs you nothing. An individual copy of some commercial reference manager software can cost hundreds of dollars. An annual site license for a university can cost many thousands. The benefits of this are obvious! Anything that lessens the strain on students' wallets and library and campus IT budgets is a win.

Zotero is also "free as in speech" (*libre*), free to copy and share without restriction. This has some real practical benefits for both users and

support staff. I have worked for two different university libraries, both of which have provided support for a commercial reference manager as well as Zotero. Both universities have a site license for the commercial product, meaning that students and faculty can download it without cost. In order to do so, they have to find the software download page, log in with an ID and password to validate their identity as current students or employees, download and install the software. At my current library, the program in question requires an unintuitive additional step to the installation procedure in order to install it successfully. If this procedure isn't followed correctly, users end up with a non-licensed thirty-day trial version of the software instead. It might be our number one support question, despite the instructions and tutorial video we've posted on our website.

In contrast, we can put a one-click installation link for Zotero anywhere. Because it's *free/libre*, we have no problems with passwords or logins or accidental trial versions. This also means that unlike commercial software, our Zotero-using researchers can take their reference manager with them freely and legally if they graduate or change universities. I would argue that providing *free/libre* tools (and secondarily, teaching our users about them) is very much in line with the mission of libraries and educational institutions.

By their nature, open-source projects have resilience because they are not dependent on a single entity (company, person, university) to survive. CHNM is made up of academic researchers and their main goal is to create a good tool for researchers; Zotero's survival is not contingent on making a profit. They have stable long-term grant funding for Zotero, and we can look forward to many years of development and improvement, but if for some reason George Mason University chose to drop the Zotero project another institution could take up the existing source code and continue to develop it.

The CHNM developers that created Zotero did so with a commitment to open standards. It is designed not only to work with as many online catalogs and databases as possible, but also to import and export to and from as many other different programs as possible. Commercial software often intentionally locks the user into using data in its own

proprietary format so that she (or her university) will continue buying future versions of the program to ensure that she can continue to access her files. Zotero makes it easy to share citation files with other software because it can read and write many standard formats used by other programs. If a better reference manager comes along tomorrow (unlikely as that seems) you can reasonably expect to be able to click "export" in Zotero, save your entire library and move it into your new program without a hitch.

This open design also makes Zotero itself extensible. In the same way that Firefox can be enhanced with add-ons like Zotero, Zotero in turn has add-ons that add new features. Because Zotero is open source, programmers can examine its inner workings and find ways to create new uses for it.

Opening the source code of a piece of software also allows an effective strategy for identifying and fixing bugs. Because the code is available to anyone who cares to examine it instead of only a small closed group of developers, the probability of someone being able to spot and repair problems increases dramatically. Open-source advocate Eric S. Raymond calls this principle "Linus's Law" after Linux creator Linus Torvalds: "Given enough eyeballs, all bugs are shallow." As Raymond puts it, "bugs ... turn shallow pretty quickly when exposed to a thousand eager co-developers pounding on every single new release."¹

Because Firefox checks automatically for updates to all of its add-ons, including Zotero, CHNM can easily push out new versions that correct bugs and add new features, and they do so regularly. The user need only accept the new version when a notification window appears; she need not watch the Zotero website for announcements.

A Word About Firefox

Zotero was first developed for Firefox because it too is open source software. Mozilla, the developers of Firefox, created it with the intention of allowing other programmers to add improvements and features that they didn't anticipate. As I mentioned above, Firefox allows its users to install "add-ons" or "plugins" made by third parties. These add-ons can add remarkable new features to the browser, but this is made possible

by the fact that the creators of add-ons have access to Firefox's source code to see how it works. For the first few years of Zotero's existence, it worked only with Firefox, and the Firefox version remains the most mature and stable one for the time being.

For many researchers this isn't a big problem. About a quarter of web users are using Firefox already. I think there may be some overlap between Firefox users and researchers who are more comfortable using technology tools in their work (though that's purely anecdotal and unscientific). This isn't an open-source elitist point of view, and I'm not suggesting that Firefox users are smarter. It's probably just a question of inertia: a new Mac comes with Safari pre-installed and a new Windows computer comes with Internet Explorer (IE). It takes a conscious decision to download and install Firefox or Chrome, and many web users simply don't have a strong enough preference to bother, or the ways in which they use the web aren't significantly affected by choosing one browser over another. Users who choose to take advantage of their browser's more advanced features may come to appreciate the add-on functions of a more extensible browser like Firefox or Chrome.

If you are a librarian who intends to offer Zotero on your student or public computers, you should consider using Firefox, at least for now. Hopefully that won't mean a battle with your administration or IT department—that would probably be an unusual case at this stage in the browser wars. Every campus computer lab and student library computer of my recent experience has already had Firefox installed alongside IE or Safari. Most campus IT professionals and systems librarians recognize the value of having a choice of browsers, the advantages of open source, and the demand for Firefox as a common option. For a few bits of practical advice on implementing Zotero on public workstations, see chapter 7.

Why Use Zotero?

In a way, this is two questions—"Why use a reference manager at all?" and "Why use Zotero in particular?"

The most fundamental reason to use a reference manager is simply that it saves huge amounts of time and effort. Any researcher, whether a student, librarian or professor, always has time constraints. The

current research project is never the only plate spinning at any given moment. There are other classes to attend or teach, other papers due, other tasks to complete before the end of the semester. Investing a little time into learning to use a reference manager and incorporating it in to the research process pays off manifold by giving the scholar a complete system for gathering sources, organizing and citing them. Most people can pick up the basics of Zotero in just a few minutes.

I once had a professor specifically ask me not to teach Zotero to her class during a library session because she thought it made the bibliography "too easy." She never used the word "cheat," but she gave me the clear impression that she felt it was something of a lazy shortcut. Of course I acceded to her request—it was her class and I was a guest speaker—but obviously I disagree.

The Association for College and Research Libraries' Information Literacy Competency Standard for Higher Education number 2, performance indicator 5 states that "The information literate student extracts, records, and manages the information and its sources." This indicator's given outcomes include:

- a. Selects among various technologies the most appropriate one for the task of extracting the needed information...
- b. Creates a system for organizing the information
- c. Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources
- d. Records all pertinent citation information for future reference
- e. Uses various technologies to manage the information selected and organized²

This list of outcomes describes the function of a reference manager nearly perfectly.

A reference manager frees up researchers from much of the mindless clerical process of formatting citations, *so that they can focus on the research itself*. Discovering sources is an important aspect of research. Assessing sources, organizing them, evaluating them and presenting them in an established format are all important aspects of research.

Understanding *why* citations are necessary to the research process is a vital part of learning to be a scholar.

The mechanical exercises of typing out the bibliography, pressing the italics button in the right place and dragging the hanging indent just far enough are not vital scholarly activities. Reference managers can help students learn proper citation practice by providing an efficient way to collect and produce accurate citations, and in fact may encourage them to include more and better citations in their work. In order to use such a tool properly, students still have to learn the function of a bibliography in scholarly writing.

The tools we use in research and writing change with time, and at this point in history many of us have seen this change happening around us during our lifetimes. When I started my undergraduate degree, my university's library still had a card catalog alongside the (green monochrome) online catalog terminals. Readers slightly older than me probably wrote college papers using typewriters rather than word processors, and used print journal indexes rather than article databases.

The writing and searching tools that we all use now are faster, more efficient, and make more resources available to us. They do change the way we work and make research easier. Using them doesn't make us lazy researchers, any more than using a word processor makes me a lazy writer because I don't have to spend time using correction fluid to erase my (frequent) mistakes. We've abandoned old-fashioned tools in the same way that many researchers have abandoned index card notes in favor of a reference manager like Zotero.³

Doesn't it keep students from learning how to write bibliographies, if they have a program to "do it for them"? No. This is like asking whether spell-check and grammar-check software relieve the burden of learning to write well, because the software does it. (Students spell-check their papers, but you still likely too see them make a lot of mistakes.) They will still have to use a style manual in some form, because reference managers don't do the whole job. Even using Zotero, I have to proofread for, and correct, mistakes in capitalization, punctuation and the like before I publish a bibliography, and I always warn students to do the same.

That's the argument for using a reference manager program—any reference manager. Why use Zotero specifically?

Zotero is easy to use. A first-year student can learn the basics of Zotero in ten minutes. It has many advanced features that more sophisticated researchers can appreciate, but the basic "save and cite" function is extraordinarily simple. CHNM often uses the phrase "iTunes-like" to describe the Zotero interface, and it is: clean, logical and familiar to most students. The process of saving citations to the Zotero library is effortless—one click—and consistent across databases and catalogs, unlike some other reference managers that require learning different procedures for each database.

Zotero is free in all the senses discussed earlier. I've already made a case for all the ways in which free software benefits researchers.

Zotero works on many platforms. It works with Firefox and other web browsers. It works with any of the three major operating systems. Its word processor plugin works with Microsoft Word, OpenOffice and NeoOffice. The Firefox version works on every computer and installs with only a couple of clicks. This simplifies the setup process for even very inexperienced computer users. Future versions will work with mobile devices and even via the web without installing any software.

Zotero integrates into the researcher's browser, which is almost always part of the research and writing process. The Firefox version even operates without the need to open a separate application to save and manage citations, annotations, notes and attachments. It's a natural place to include a reference manager, integrating it smoothly into the research process.

Zotero synchronizes the user's library with the Zotero servers. This provides an automatic backup of the researcher's crucial library files. It also takes advantage of the cloud storage provided by CHNM to access the same library on multiple computers and across multiple operating systems. I access my Zotero library, including PDF attachments and notes, on my Windows PC in my office and my Ubuntu Linux netbook at home, without having to copy it manually and keep track of which version is the current one. I can also refer to my library on the web, even on a computer without Zotero installed or on a device like a mobile phone or iPad.

Zotero allows sharing of libraries among classmates, co-authors or other collaborators. Shared libraries can be public or private, and created as open groups which anyone can join or carefully curated by select editors.

Zotero can archive any web page. A single-click function not only saves citation data about a page for the researcher's bibliography, but a copy of the page itself called a "snapshot." Snapshots preserve the full text, graphics, and layout of a page, making it available even if the site goes down, the page is altered or deleted, or the user has no internet connection.

Zotero provides a way to publish bibliographies on the web in a variety of ways, from a simple copy and paste mechanism to plugins for content management systems. The bibliographies that Zotero creates also contain data that Zotero can read, allowing other researchers to capture the same citations to their own libraries.

Zotero encourages others to create new tools. Other institutions have built on CHNM's work to develop plugins that add new features to Zotero. (For a current list, see zotero.org/support/plugins.)

Zotero has an active support community of librarians, faculty, tech evangelists, and programmers. Its official forums (forums.zotero.org) include discussions of features, bugs, uses, bibliographic styles, and more. The Zotero evangelists' listserv (groups.google.com/group/zotero-evangelists) is for librarians and educators who teach or promote Zotero at their institutions.

"Hybrid" Software

In the last few years, cloud computing applications—programs that run entirely on a web server, as opposed to being installed on one's own computer—have become so common as to be unremarkable. It's hard to remember what we did before Gmail and Google Calendar.

Since Zotero works inside the browser window and uses online file storage, many people assume that it too is a cloud application. In fact, it's something of a hybrid. Though tied closely to the web browser, the Zotero software itself (whether the Firefox add-on or the standalone client version) is actually a desktop application, downloaded and in-

stalled on the user's computer like any other program. References and attachments are saved on the hard drive. It is easily possible to use Zotero entirely as a local application without taking advantage of any of its online features.

On the other hand, some of the most useful aspects of Zotero involve its cloud integration. The personal Zotero library is created on the hard drive, but setting up automatic cloud-based backup is easy and once set up, automatic. This online synchronization feature also allows easy sharing of references, either privately to the user's other computers or to collaborators anywhere in the world. New and upcoming "Zotero Everywhere" features will allow researchers to use Zotero entirely as a cloud-based application, saving, editing and publishing references via the web without installing a single piece of software.

These hybrid characteristics allow Zotero to take advantages of the best elements of both kinds of software: the reliable availability and fine-tuned customization of desktop applications, and the automatic archiving and easy sharing features of cloud applications.

A Personal Library

Central to the way Zotero and other reference managers work is the idea of the library. In this context we're not talking about library in the sense of a building on campus with bookshelves, but a personal library, a collection of information created by the individual Zotero user for her own research needs.

Thanks to media manager programs like iTunes, most students can grasp this concept quickly when learning Zotero: Your library is comprised of all of the items (music in one case, or citations, notes, and attachments in the other) that you've saved in one place so that you can search it, share it, add to it, annotate it, cite it or otherwise easily use it as you need to. This has many advantages for the researcher, some obvious and some less so.⁴

The personal library is, well, personal. It represents an individually curated collection of sources, not a massive sea of data that includes irrelevancies. This is less pertinent to the undergraduate who needs three sources for an essay in a required first-year composition class,

but highly useful for more advanced researchers. Once students reach a level at which they discover their own research interests, whether as undergrad majors or graduate students, they will find themselves revisiting topics in their research and re-using sources as they build on previous projects.

Building a personal library also teaches student researchers about how information is organized in library catalogs and databases. It's one thing for a librarian to teach a student to search a database, but another for the student to create a database of his own as a practical exercise in organizing information for his own needs.

Searching the personal library is fast and easy. Anything saved to a Zotero library is searchable, including the full text of PDF articles and archived web pages. The researcher need not remember the name of the author of "that one really great article" from last year's paper, as long as she can recall a word or two from the title, abstract or subject. Unlike in a commercial research database, the Zotero user can also add notes, tags and other searchable information to any item in the library to make retrieval easier.

In fact the whole library can be organized idiosyncratically, to fit the way you as a researcher prefer to work. Zotero's tags and collections are flexible enough to provide virtual "bookshelves" to group items together, and saved searches can provide self-updating groups of references.

Zotero can create a private archive, not only of bibliographic citations but of any digital objects. Snapshots preserve copies of any web page for offline access or annotation. PDFs, images, text documents, audio files, slide shows, or anything else on your hard drive can be archived and tagged with the information needed for citation and searching.

Beginning undergrads must take classes in varied disciplines, requiring them to produce citations in many different styles over their early academic career: MLA for an English class, Chicago for history, maybe APA for psychology. Saving references to a personal library stores the information in a style-agnostic format, rendering it easy to output in whatever way the professor requires. This makes their refer-

ences "portable" across classes and more useful to them than simply keeping copies of past papers.

Because the personal library is digital, it can live on the web just as happily as on a hard drive. This means that it is shareable and collaborative in new and exciting ways. Any Zotero library can be made available to other researchers either publicly or privately. Public applications could include publishing bibliographies as a resource for the good of the research community, or to invite commentary on work in progress. Private sharing allows collaborators or classmates to share work across distance in a secure online space.

Scenarios and Personas

In sidebars throughout the book, I'll present scenarios, examples and use cases of how real users might apply the features I'm explaining. To make them a little more concrete, I've chosen to create a few personas, fictional researchers that represent the kinds of Zotero users I teach and help (and learn from) on a regular basis.

Ian: Undergraduate student. Ian is a sophomore majoring in Journalism and going to school full-time. He is taking three courses this semester, one in his major and two others to satisfy the university's general education requirements for a bachelor's degree. Ian's classes this year are proving a little tougher as the research assignments have ramped up a bit from last semester. He's got a lot of conflicting demands on his time and appreciates any tools that will help him get his work done faster. He uses library computers when he can find one available, and his own laptop in his dorm or elsewhere.

Anita: Graduate student. Anita is working on her master's degree in Communication and works for Kate as a research assistant. She is in the midst of writing her thesis and is taking two classes. She's enthusiastic about experimenting with technology and wants to encourage Kate to try some new tools. She is never without her netbook.

Kate: Faculty member. Kate is an associate professor in the Communication department. This semester she is teaching one graduate class and one for undergraduates. She is finishing a journal article and is doing research for a book proposal on the same subject. She doesn't

have a lot of time to learn new tools but she's willing to try if it will make her life easier. She does a lot of her research from home where she's less likely to be disturbed but uses her office computer as well.

Nathan: Librarian. Nathan is the subject librarian for the Communication department and the main Zotero instructor and support person on campus. In addition to supporting others' research, he also does his own research and writing. He has an office in the library, but also holds office hours in the Communication department across campus, and often writes on his own laptop at home.⁵

These users and others like them will find Zotero useful as they do research for any number of projects. Over the following chapters we will examine how Zotero can be applied to academic and personal research tasks. (In chapter 6 in particular I am also fortunate to have a number of real-world projects and assignments from Zotero instructors to use as examples.)

Research Uses

Zotero is created primarily as a research tool, and there are several contexts in which it's useful for researchers, such as:

Research papers: The most obvious and clear-cut example for using Zotero is saving sources and creating bibliographies for student research papers. An undergraduate student can learn the basics of how to save citations and turn them into a bibliography in just a few minutes.

Articles and books: Zotero's citation features allow authors to create footnotes or in-text citations and bibliographies automatically. For articles that may need to be reformatted in a style dictated by a journal's editorial guidelines this is a great time saver. Zotero's collections feature allows for easy organizing of citations by chapter for longer works.

Keeping a library of research interests: Once students or more advanced researchers begin discovering and working within a particular research interest, the personal library provides an easy way to track sources for current and future projects and save them for later reference.

Tracking publications: Faculty can keep their own CV up to date by simply saving citations to their own work in their library. Librarians who work with a population of researchers can track their constituents' publications for exhibits or other uses the same way.

Sharing references: Group libraries provide a way to share sources with classmates, students or collaborators. Any Zotero collection can be published to the web, along with the data for other Zotero users to save citations to their own libraries. Professors and research assistants can share libraries with one another.

Tagging images: Zotero provides a mechanism for researchers to add metadata to images: artists, dates, notes and other information that cannot be included in an image file.

Organizing audio: The same goes for audio objects such as recordings of interviews. Saving mp3 files to a Zotero library and attaching them to citation data and even transcripts renders audio recordings easily searchable.

Creative Uses

Zotero's usefulness is not limited to academic research and writing. There are many creative uses for anyone who needs to organize information objects of all kinds. Just to give a few examples:

Collecting book lists (or video lists, or audio, or articles...): One of my Zotero collections is called "Pleasure reading" and is simply a list of novels I want to get around to reading; it consists mostly of citations I saved from Amazon.com. I have another collection called "Look for this," for sources I don't necessarily plan to use in research, but that I want to remember to track down soon.

Bookmarking, personal or shared: There are many social bookmarking applications on the web, but Zotero group libraries allow control over who has read and write access to which sets of bookmarks, and of course Zotero allows file attachments and web snapshots as well.

Citing images: For anyone who uses Creative Commons images in presentations, Zotero allows one-click saving of the citation information and can easily generate a credits list to go in a final slide.⁶

Archiving web pages: Zotero's snapshots feature allows easy backups of any web page for offline viewing or archiving. This can be used for research, or to create a searchable database of any collection of pages—favorite recipes, for example.

Zotero Changes Fast

One of the great things about Zotero is the steady pace at which its developers add new features and release new versions. As I said in the introduction, I expect the material in this book to remain useful for quite some time, but I also expect that there will be additions and improvements by the time you read this that I haven't covered. I still discover new tricks after several years of using and teaching Zotero.

As I was a couple of months into writing this book, the Center for History and New Media announced their new "Zotero Everywhere" features, providing integration into more browsers, enhanced web-based features, and the new Zotero Commons repository. I was both delighted, as an enthusiastic user, and horrified, as an author, since I was now required to radically re-plan and rewrite entire sections of the book and write sections on coming new features as they appeared.

When I started writing this book I thought I knew how to use Zotero—and I did, to a pretty fair degree—but in the course of researching, experimenting with features I'd never used, and talking to other Zotero users I developed a new appreciation for the sophistication and elegance of this software. It's truly a researcher's power tool.

Notes

1. Raymond, "Cathedral and the Bazaar."
2. Association of College and Research Libraries, "Information Literacy Competency Standards for Higher Education."
3. One librarian found that using reference managers encouraged students to use library search tools because the citations were more complete than those saved from Google Scholar: Williams, "When an imploring librarian is not enough."
4. For a useful discussion of the advantages of the personal library, see Hull, Pettifer, and Kell, "Defrosting the Digital Library."
5. It is possible that Nathan's situation contains a few elements from the author's own professional life.
6. Greenhill, "Zotero and saving Flickr images. Wowza!".

Further Reading

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CHAPTER 2 **Setting Up**

So far I've discussed why using Zotero is a good thing and some of the ways in which it's particularly useful. Let's start finding out what using Zotero is actually like. Installing Zotero is very easy and only takes a few clicks.

There are two versions of Zotero, depending on what web browser you use. The original version works only with the Firefox browser; when the distinction matters, I'll refer to it as "Zotero for Firefox." It runs inside the Firefox application and doesn't require running a separate program to work. The newest version, Standalone Zotero, works with other browsers like Chrome and Safari. It's a separate application that runs in its own window.

Once you've installed Zotero, it scans web pages looking for available citations. When it detects that you're on a page that includes a citation of some kind (like a library catalog record, for example), a button appears allowing you to easily save the information to your Zotero library.

Later, as you're writing, you can easily turn those saved citations into a bibliography formatted in whatever bibliographic style you need. There are at least two methods for doing this. Option one is an easy copy and paste system that works with any word processor or text editor, including Google Docs or any web editor. The second method involves installing a toolbar to Word or OpenOffice that allows you to pick citations directly out of your library, and not only creates the bibliography but also the in-text citations or footnotes. (See chapter 4.)

Integrating Zotero into Your Research Process

Before you set up Zotero, consider how using Zotero might affect the way you do research and write. It saves a great deal of time and effort, but it will change the way you work in some ways.

Install Zotero on your research computer(s) before you begin your project. Students often wait until nearly the end of the semester, when

they're writing the final bibliography, to begin using a reference manager. Zotero is designed to be involved in the entire research process start to finish. It's nearly effortless to save citations while the initial searches are taking place, but more trouble to install Zotero after writing the paper, go back and re-search the sources and then create the bibliography.

Creating a collection for each project is an easy way to organize sources so they don't get lost in a large Zotero library. Select the collection in your library when you sit down to do research so that all saved references go there automatically. Using tags and saved searches can help keep track of which sources you have obtained and read.¹

Zotero is not just a save-and-cite application: it's a repository for all your research materials. As you do your research, add notes, PDFs, snapshots, images and tags to your library. Everything you add becomes part of your personal information repository, searchable and organized the way you want it.

Finally, as you write use Zotero to insert citations into your document. It creates the in-text citations or footnotes and builds the bibliography simultaneously. If you notice errors in your citations, correct them in the library (not in your document) so that they will be correct if you cite them in other work. Keep your collection after the project is done so that you can locate your sources for later reference or future projects.

Zotero for Firefox or Standalone Zotero?

Zotero was initially developed for Firefox only, since Firefox was designed for third parties to create new plugins for it that add new features. Early in 2011, CHNM released "Standalone Zotero," a new version that runs as a separate program rather than as a Firefox add-on.² What are the differences between the two versions?

- Zotero for Firefox has a single version that runs on any operating system. Standalone Zotero has separate versions for each operating system (Windows, MacOS and Linux).
- Zotero for Firefox requires installing the word processor toolbar as a separate add-on. Standalone Zotero includes word processor toolbars bundled with the software.

- Zotero for Firefox obviously only works with Firefox. Standalone Zotero also works with the Safari and Chrome browsers (in 2011 support for Internet Explorer is planned but not yet available).
- Standalone Zotero requires you to install a "connector" before it can detect and save citations in Chrome and Safari. The connector is a small browser add-on that allows Chrome or Safari to communicate with Zotero. Zotero for Firefox automatically detects citations without any need for a connector.

The two programs can share the same library between them, so it's possible to install and use both. Only one version (Firefox or Standalone) should be running at a time, however, and changes you make in one version won't appear in the other until you close it and restart.

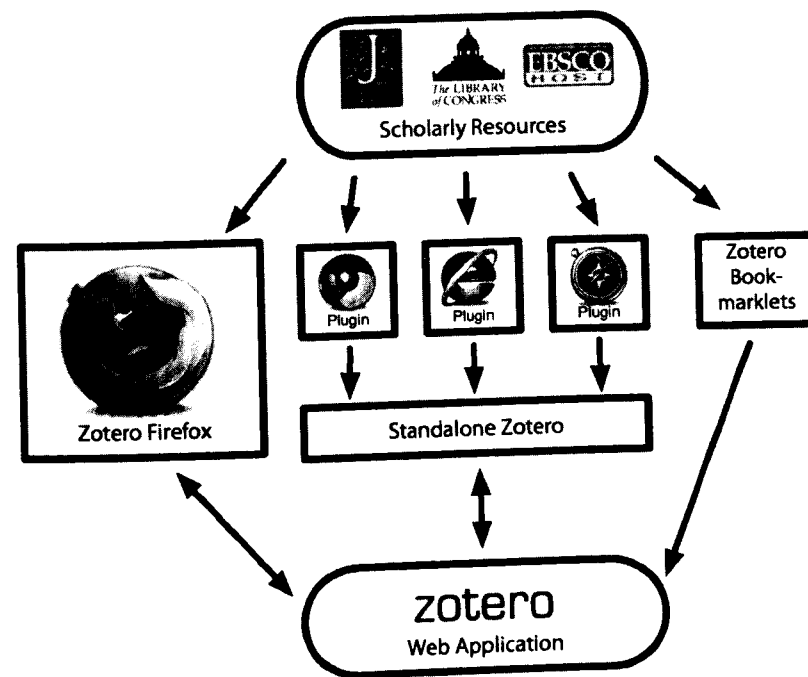


Figure 2.1. Zotero for Firefox and Standalone Zotero, and soon other tools like bookmarklets, provide access to the same personal library. (Image courtesy Center for History and New Media)

In most cases the two versions work more or less identically—the controls, buttons and menus are the same, for example. I typically use Zotero for Firefox in examples unless otherwise noted.

Obviously, you'll need to start by installing Zotero. Let's do it. Install either Zotero for Firefox, or Standalone Zotero, or both, depending on your needs.

Quick Reference: Installing Zotero for Firefox

1. Open zotero.org in Firefox.
 2. Click Download on the site, then Allow on the security bar.
 3. Click Install Now.
 4. (Recommended but optional) Open the Word Processor Plugins page. Choose the appropriate plugin and install as above.
 5. Close your word processor if open, and restart Firefox
-

Installing Zotero for Firefox

Step 1. Open Firefox and go to Zotero.org. Remember that this version of Zotero only works with Firefox. In almost every Zotero class I teach, someone attempts to install it using Internet Explorer no matter how many times I repeat the instructions to open Firefox. If you're teaching a Zotero workshop, plan to walk around for some hands-on assistance during the installation steps.

Step 2. Click the large red "Download" button at the top right. At the top of the page, Firefox will open a notification that says "Firefox prevented this site (www.zotero.org) from asking you to install software on your computer." Don't worry! This is a standard warning that you'll see any time you install a Firefox add-on. It's just alerting you to the fact that you've just clicked a link that will install a browser extension. Click the Allow button to continue. In older Firefox versions (pre-4.0) this alert message is sometimes easy to overlook because it's not in an eye-popping color. If you're teaching, don't be surprised if some students don't notice it.

Step 3. A new window called "Software Installation" appears. Click the **Install Now** button to install Zotero. This button counts down for

five seconds from "Install (5)" before it allows you to click it, to encourage users to read the window before agreeing to install software.

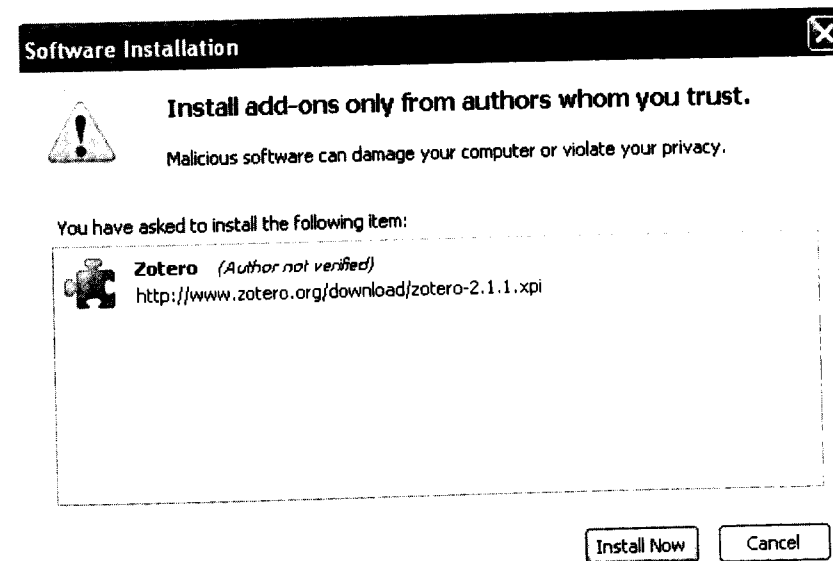


Figure 2.2. Installing Zotero for Firefox

The Software Installation window will close, and the Add-ons window will open and display a progress download is finished, a "Restart Firefox" button appears at the top right of the Add-ons window. Don't click it yet, though; we can save a step by installing both Zotero components at the same time.

Step 4. Go back to Zotero.org. Below the Download button you'll see a link that says "**Download word processor plugins.**" Click this link to go to the "word processor plugin installation" page (zotero.org/support/word_processor_plugin_installation). This page includes the various toolbars that allow you to insert Zotero citations and bibliographies into your documents, which we'll look at more closely in chapter 4.

Zotero for Firefox only has one version that works with all operating systems, but there are separate versions of the word processor plugin depending on which program you use: there is a version for Word for Windows, one for Word for Mac OS, and so on. Scroll down until you

see the name of your word processor (Word or OpenOffice). Each has its own link labeled, for example, “**Install the Word for Windows Plugin**” (or “the Word for Mac plugin” or “the OpenOffice plugin,” of course). Mac users should install an additional plugin called PythonExt linked from this page; just follow the instructions in the Mac OS section of the page. If you use both Word and OpenOffice, you can install both toolbars with no problems.

Step 5. To install the word processor toolbars, close your word processor and follow the same steps you did when installing Zotero: click the appropriate Install link, click Allow, Install, and wait for the progress bar. This time, **click the Restart Firefox button**. As you’d expect, this will restart Firefox. (Restart your word processor too, if it was open.) When it opens again, you should see the word Zotero in the bottom right corner of the browser window. Your browser now has 100% more Zotero available.

Installation problems—such as if the Zotero button doesn’t appear in the bottom of the browser—can often be corrected just by reinstalling Zotero and restarting the browser. If you’re installing the Firefox version of Zotero, make sure you’re actually in Firefox, or it won’t work.³

Like all Firefox add-ons, Zotero for Firefox and its toolbars are self-updating. Firefox periodically checks for new versions to all of your installed add-ons, including Zotero, and will prompt you if it detects a new version available. I recommend immediately installing

any new Zotero versions since they often include important bug fixes, style revisions or translator updates.

Firefox will also prompt you to install new versions of the word processor toolbars when available. Make sure your word processor is closed before you install the new versions.

Installing Standalone Zotero

Standalone Zotero is the new version of Zotero that runs as a separate application, not as a Firefox plugin (it’s a “standalone” application, whereas Zotero for Firefox runs as part of the browser). This allows Zotero to work with other browsers like Chrome and Safari. Installation is a bit different, but once installed the two versions of Zotero work almost identically. The main difference is that Zotero for Firefox runs in a “pane” in the Firefox browser window that can be hidden or displayed as needed, while Standalone Zotero runs in its own application window. Standalone Zotero also requires a small plugin—a “connector”—to allow it to save items from browsers other than Firefox. Zotero for Firefox and Standalone Zotero can be installed on the same computer, and either one can save data to the same library, but only one of the two programs can run at a time.

There are separate versions of Standalone Zotero for each operating system. The appropriate word processor plugins are included with each version, unlike Zotero for Firefox.

Step 1. Go to zotero.org/support/standalone and **download the version of Zotero for your operating system**. (Details of installing the application will depend on your OS; check with your IT help desk if you need advice on how to install software on your system.)

Step 2. Download the connector for your browser from the Zotero Connectors list. Just click the link labeled “Zotero Connector for Chrome” or “Zotero Connector for Safari” and when prompted confirm that you want to proceed with the installation. Like the Firefox version, downloading and installing only takes a few seconds.

Step 3. Run the Standalone Zotero program. The software will ask you whether to import your settings from Zotero for Firefox if you have installed the Firefox version already. In most cases you’ll want to answer yes; this allows the two programs to save items to the same

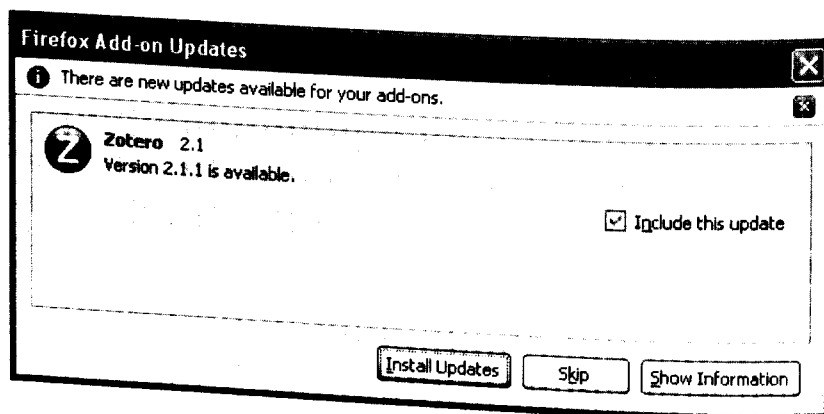


Figure 2.3. Firefox prompts you to update when a new version of the Zotero add-ons are available.

library. If you choose “no” or “custom data directory” Standalone Zotero and Zotero for Firefox will each have their own separate library.

If the two programs share a library, only one program can be active at a time. If you attempt to run Standalone Zotero while Firefox with the Zotero extension is running (or vice versa), a warning will appear advising you to close one program before opening the other.

At this point, Zotero for Firefox is the more mature and stable version, and in much wider use. Because of this, most of the examples in this book (and most Zotero documentation on the web) assume that you’re using Zotero for Firefox. Fortunately, the two versions behave almost identically: the Standalone Zotero window looks and acts exactly like the Zotero pane in Firefox. All the buttons are the same, and the combination of Standalone plus connector will provide the same functions that the Firefox version does.

The Zotero Pane

Click the Zotero button in the bottom right corner of Firefox to open up your Zotero library pane. (You can use control-alt-Z in Windows or Linux, or command-shift-Z in Mac, as a keyboard shortcut.) The Standalone Zotero window looks exactly like the Firefox Zotero pane: all the buttons and functions are the same. When you open this pane it fills the bottom section of your browser, leaving the top to display your current web page as normal. Drag the top edge up and down to adjust the size of the pane. Press the Toggle Tab Mode button, in the top right corner of the pane between the green circular arrow and the Close button, to fill the entire window and run in a browser tab. Zotero for Firefox continues to run while Firefox is open, whether the pane is visible or not. Open and close the Zotero pane as needed while you work.

The Zotero interface is designed to remind users of iTunes, a program that most people find intuitive and familiar. It’s divided into three columns:

In the left column you can see “My Library” near the top next to a small box icon. Clicking this icon will show all the references you’ve saved. This area will also include collections (subsets of your library like folders or playlists) and group libraries that you share with other

Zotero users. Libraries are indicated by brown box icons, and collections with yellow folder icons (blue for Mac users).

Below this is the tag selector, showing all the “tags” attached to the library or collection you’re viewing. At the moment this area is probably empty.

Click “My Library” in the left column. The middle column of the Zotero pane shows a list of all of the items in your library. If you select a collection or a group library (more about these later), Zotero will show all the items contained in whichever collection or library you’ve selected. An “item” in Zotero is a reference, a note, a snapshot, a web link—any single thing that you have saved in your Zotero library. Usually this means a reference like a book or article citation, but an item can also be a PDF file or any number of other things. Items can be attached to other items: a plus or minus sign (or a triangle icon on some operating systems) appears next to items with attachments. Clicking the plus sign or triangle shows the attachments, and clicking the minus sign (or triangle again) hides them.

If you’ve just installed Zotero for the first time, the only item in your library is a link to the Zotero “Quick Start” guide, which is a useful page to add to your browser’s bookmarks too.

From left to right, the three columns go from libraries and collections, to lists of items, to an individual item. When you click a library or collection in the left column, it displays its contents in the middle; when you click an item in the middle column, it displays details on the right. Click the Quick Start guide (or another item if you have others in your library). In the right column, you’ll see the bibliographic information Zotero records about this website. You can edit any field—title, author, date, and so on—just by clicking once on the text in the right column and typing over it.

A row of buttons spans the top of the Zotero pane. We’ll examine their functions in some detail through the next few chapters.

The best way to learn Zotero is to dive in and try it. The first thing you’ll need to do is learn how to put items into your library by saving some citations. The next chapter will show you how to build your library.

Notes

1. Mullen, “How to Create a Work Flow in Zotero.”
2. At the time this book went to press, CHNM had just released the alpha (early test) version of Standalone Zotero. There have likely been improvements and additional features added by the time you read this; check the Zotero website for updates.
3. The first time you reload Firefox after installing Zotero, the “Welcome to Zotero” page opens in the browser. Library IT staff who are creating a disc image for public computers may want to restart Firefox again before making the image, or this page may come up on every imaged computer every time Firefox starts.

Further Reading

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CHAPTER 3 Creating your Library

To summarize as broadly as possible for a moment, Zotero has two major functions: putting “stuff”—citations, attachments, notes—into your library, and getting “stuff”—bibliographies and reports—out, in the format you need. This chapter covers putting stuff in: saving, entering and organizing your references in your Zotero library.

Saving Citations: The Basics

Zotero allows you to save citations from most library catalogs and article databases, and some other sites, with a single click. Open your library’s catalog in Firefox. (I’ve chosen to use WorldCat, worldcat.org, in my examples here. Non-librarian readers may not be aware of WorldCat; it searches many library catalogs at once and is a very handy research tool.)

Try out a search: author, title, subject—it doesn’t matter as long as you get a list of results in your browser. Click on a single item so that you’re looking at the catalog record, or descriptive information, for a book.

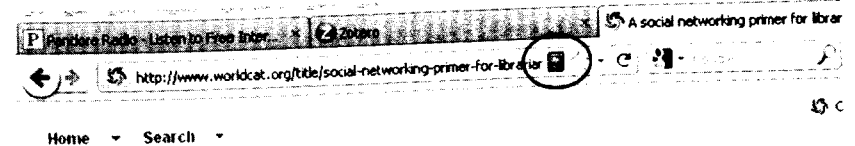


Figure 3.1. The capture icon appears at the right end of the browser’s address bar.

Now look at the address bar at the top of your browser. At the rightmost end of the address bar you should see a small blue book icon (figure 3.1). This is a “capture icon,” Zotero’s indication to you that it has detected a bibliographic citation on this page that it can save to your library. Click the blue book and watch the bottom right corner of the browser window. A small dialog box appears that says “Saving Item...” with the title of the book (figure 3.2).

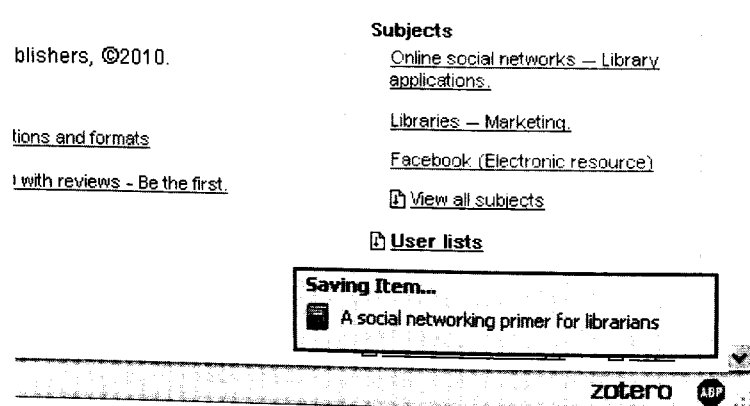


Figure 3.2. The Saving Item notification appears in the bottom right corner of the browser.

Open the Zotero pane to view your library. It now contains the citation you just saved, the name of the catalog from which you saved all this information, and a note that you saved it on today's date (figure 3.3). (You'll download more or less information depending on what library catalog you used, but it should almost always include the essentials you need for a bibliography: author, title, publisher, place and date.) Use the scroll bar on the right side to see the entire citation.

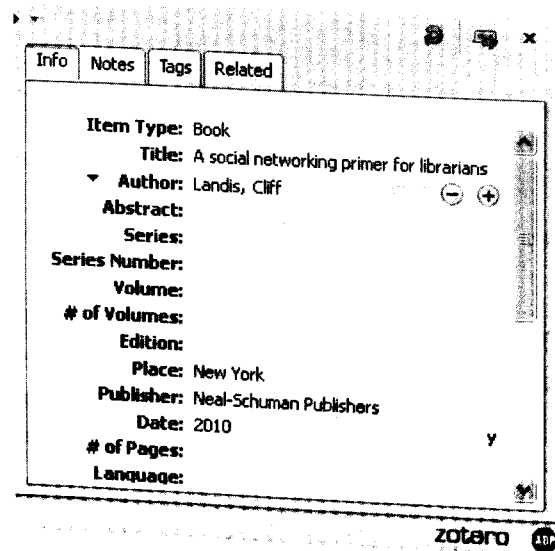


Figure 3.3. The book citation saved in Zotero.

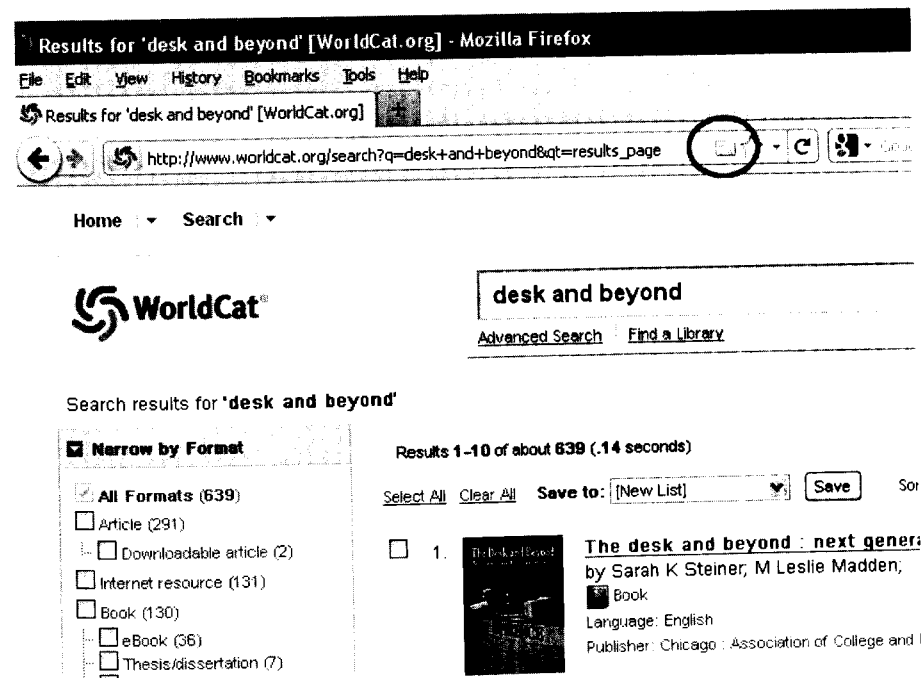


Figure 3.4. When viewing a list of items, the capture icon looks like a folder. Click it to save several citations at once.

If you're on a page containing a *list* of search results instead of a single item, Zotero indicates this fact by changing the capture icon to a folder (figure 3.4). Go back to the search results page (you can probably just press Back on your browser). The blue book button changes to a yellow folder capture icon. Zotero is indicating that there are several citations available to save. You will usually see this icon appear when viewing a list of search results.

Click the folder button. A list of all the references on this page opens, each with a checkbox (figure 3.5). Check off each item you want to save to your library (or use the Select All button) and click OK. The Saving Items dialog will appear in the bottom right again. If you are saving several references this will take a few seconds, so be patient. Each title will appear in the Saving Items popup notification as Zotero saves it to your library.

The reference will be saved to whatever library or collection you currently have selected in your Zotero pane, whether the pane is visible

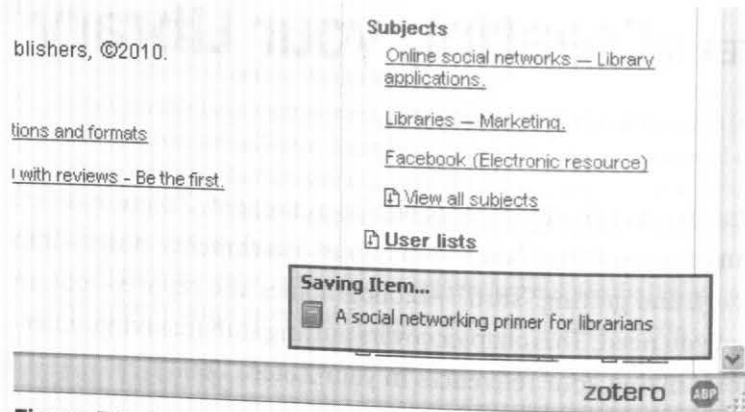


Figure 3.2. The Saving Item notification appears in the bottom right corner of the browser.

Open the Zotero pane to view your library. It now contains the citation you just saved, the name of the catalog from which you saved all this information, and a note that you saved it on today's date (figure 3.3). (You'll download more or less information depending on what library catalog you used, but it should almost always include the essentials you need for a bibliography: author, title, publisher, place and date.) Use the scroll bar on the right side to see the entire citation.

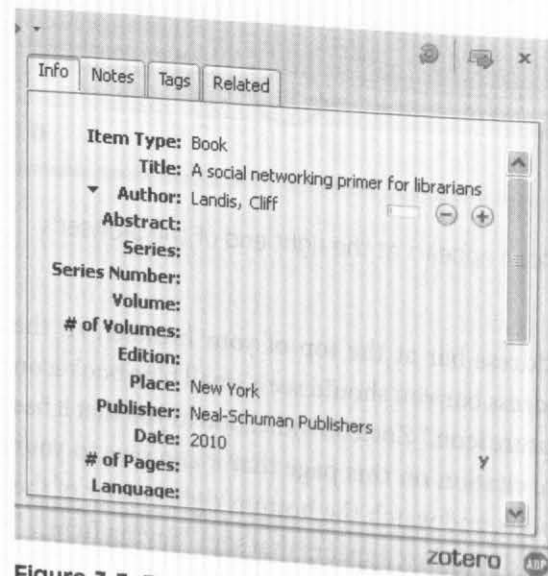


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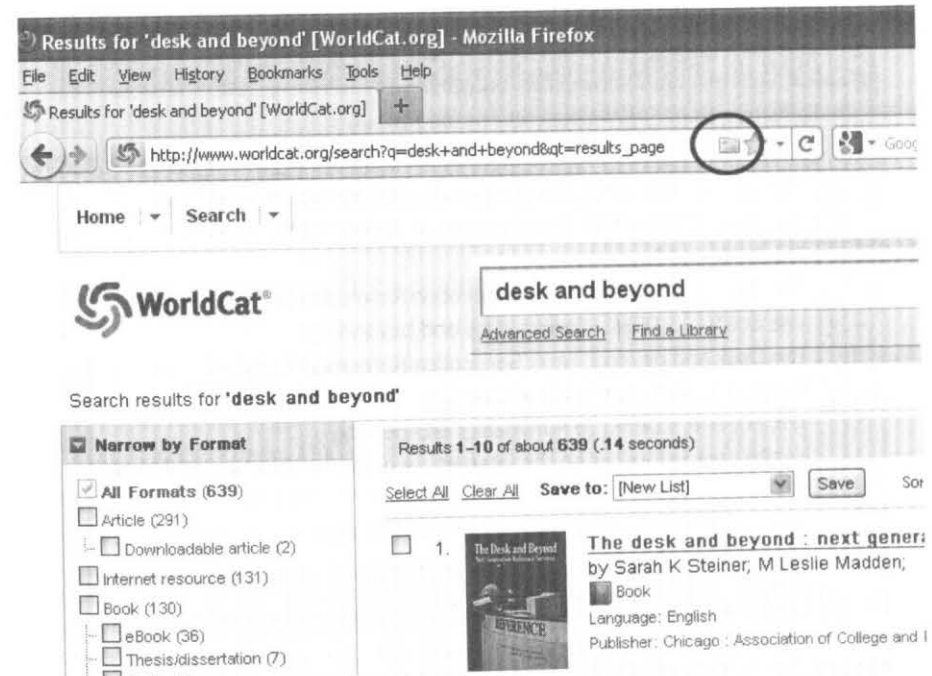


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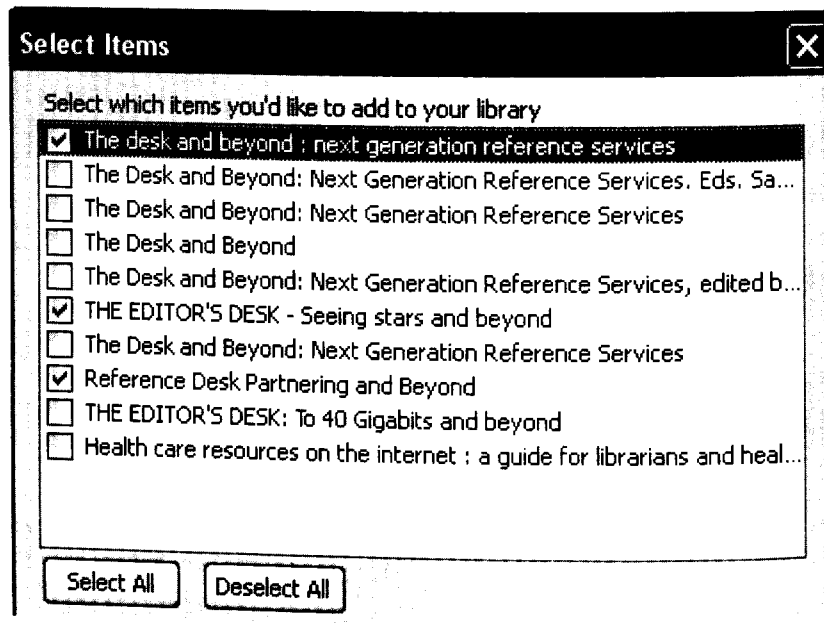


Figure 3.5: Check off each item you want to save from a list of search results.

Off-campus Proxies

A proxy server is a tool that allows off-campus researchers to access restricted library resources like article databases. When you log into JSTOR or EBSCO Academic Search from home via your library's website, you're using the proxy server.

When you use Zotero from off campus, it detects when you log into a database via a proxy server and offers to route you through your library's server automatically in future.

For example, if you go to your library's website to connect to JSTOR, Zotero pops up a window asking whether you want future JSTOR connections to automatically go through your university library. Click "Add proxy" to activate this feature.

This allows you to type `jstor.org` into your browser to log in and connect to JSTOR next time, instead of having to go to your library's site first.¹

or not. In other words, open Zotero with control-alt-Z or by clicking the Zotero button in the bottom right of your browser. If you select My Library at left, all new references you save will go into your library but not into a collection. If you select a collection, newly saved references will go into that collection (and into My Library as well, since it includes all items in your collections too). If you select a group library, new saved references will be stored there. Close Zotero and the location for new references won't change until you open Zotero and select a different library or collection.

Those are the basic steps to save citations from almost any catalog or article database. It's incredibly easy: search as usual, and when you need to save citations click the icon in the address bar. If you try the process again in an article database, the only difference you should notice is that Zotero indicates article citations with a white page icon instead of a blue book icon. (If you don't have easy access to an article database, try Google Scholar, scholar.google.com.)

Zotero uses other icons to indicate different types of references: the blue book and white article page that we've already seen, an iPod icon to indicate audio recordings, filmstrip to indicate visual recordings, a "painting" icon for artwork or images, and a blue page for websites, for example. (See figure 3.6 for a partial list.) Zotero uses these same icons in your library list, so you can tell at a glance what type a given reference is.

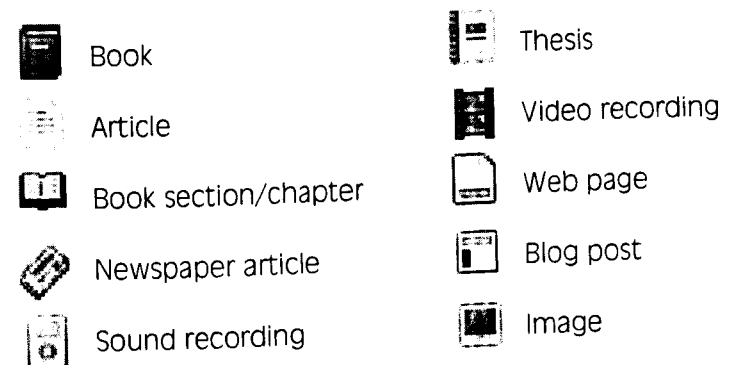


Figure 3.6. A partial list of capture icons for various reference types. These icons appear both in your browser's address bar and in your Zotero library.

That's almost everything you need to know about how to save citations. I always advise researchers to double-check the information in their saved citations, especially when using a particular catalog or database with Zotero for the first time. Zotero usually does a good job of saving the information correctly, but occasionally I find missing information, or information in the wrong field of the citation, such as a publisher name in the Place field. Also, Zotero saves title capitalization exactly as it appears in the online resource, so if an article's title is capitalized incorrectly in the database it will be saved the same way in your Zotero library. You can correct any problems in your saved references just by clicking on the text that needs to be changed and typing over it. For capitalization problems, right-click the title and choose "lower case" or "Title Case" from the Transform Text menu.

Students sometimes have the impression that Zotero saves references in a particular bibliographic style like MLA or Chicago, and ask how to choose the style they need for their papers. The answer is that these references aren't being saved in *any* style. Zotero saves each field, or element of the citation like title or author, to its database and doesn't apply any styles until you create a bibliography. (Chapter 4 describes how to do that.)

How Does it Work?

Without getting too technical, let's pause for a moment to examine what Zotero is doing and how it can tell when you're looking at a citation.

Every time you view a web page in your browser, Zotero scans it. It's looking for what librarians call "metadata"—information about a citation, like title, author, and publisher—in a form that it can recognize. The metadata is encoded into the web page, invisible to the human eye.

If Zotero can recognize the metadata on a page, it notifies you with an icon in the address bar as you've already seen. It shows a single-item capture icon (like the blue book) if it detects a single citation, and the folder button if it detects multiple citations, usually on a page of search results. (There are a few sites for which Zotero can detect a single item citation but not a results list or vice versa.)

Every website provides its metadata in a slightly different format (though that's a bit of an oversimplification: for example, all EBSCO databases use the same format, and many sites use the same standard forms of metadata). Zotero uses pieces of code called site translators to interpret all these different formats and keep track of the correct way to interpret the contents of given sites. There are translators built into Zotero for most library catalogs and research databases. Zotero updates include updates to translators as well, so there is no need to download new translators yourself.

A few notable sites for which Zotero has translators—meaning sites from which you can easily save citations to Zotero—include:

- Amazon.com
- Flickr
- Google Scholar
- Google Books
- The *New York Times*
- Wikipedia
- YouTube
- ...as well as most library catalogs and most article databases.

A longer list is available at zotero.org/translators. This list, maintained by the Zotero developers, is not 100% complete because there are many sites that work with Zotero even though they have no site translator explicitly written for them: If a site uses a standard metadata format (one format used by many sites is called COinS, for example), Zotero can recognize and download citations.

Not all of the sites on this short list, or the much longer one on the Zotero website, are what we might think of as traditional research tools like library catalogs. Zotero can save image citations from Flickr or video citations from YouTube as easily as article citations from Academic Search Complete or PubMed, and it saves book citations from Amazon as well as from the Library of Congress catalog.²

It Didn't Work!

There are a couple of cases in which this otherwise effortless process of saving citations might fail.

Astute readers may notice that I have carefully said that Zotero works with *most* catalogs and databases. The fact is that there are a few catalogs and article databases with which it doesn't work, though the Zotero developers and volunteers add new sites all the time.

If the site you're using simply doesn't show a Zotero capture icon when you view a citation or list of search results, there are two options that might still allow you to save the citation.

First, many databases and catalogs have an "export" or "save" feature offering the user the ability to send citations directly to reference manager software. Zotero is rarely explicitly named in the list of compatible programs, but this feature usually works with Zotero anyway. Look for an option labeled something like "Export to EndNote or Reference Manager" or "Export to RIS." RIS (Research Information Systems, the name of the company that developed the format) is a standard format for citation data that most reference managers, including Zotero, can import. Avoid any "Export to RefWorks" choice: this generally won't work.³

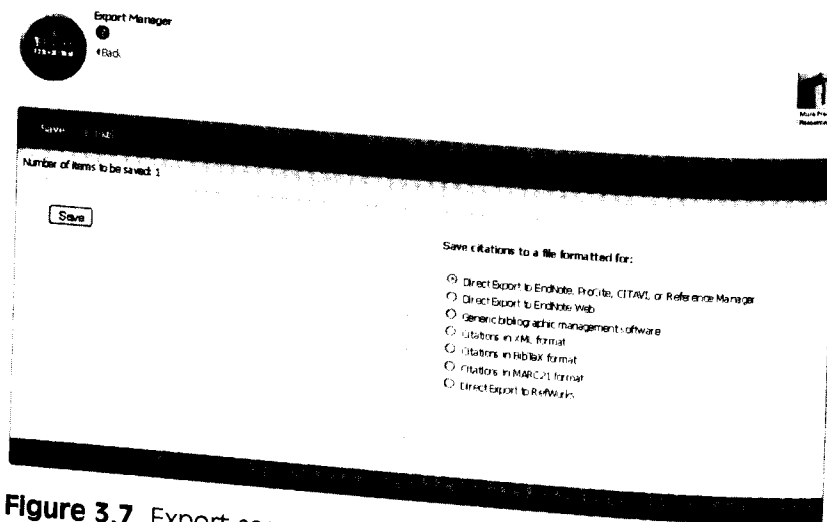


Figure 3.7. Export screen from a database. The export to EndNote or RIS format will usually work, and export to Refworks usually won't.

If the database or site from which you need to save citations lacks either a Zotero capture icon *or* a compatible export feature, the best option may be simply to find the citation in a different database. For example, although Lexis-Nexis is listed on Zotero's compatible translator list, I have never been able to successfully capture or export a Lexis-Nexis citation to Zotero. When I need to save newspaper citations from Lexis-Nexis, I just copy the article title, open a new browser window to ProQuest Newspapers, paste the title into the search box, and capture the citation from ProQuest. (Sorry, legal researchers: at this writing, Westlaw doesn't work either). When using a library catalog that isn't Zotero-friendly, the best option is often to switch over to Worldcat.org or Amazon.com to capture the needed citations.

The second failure case is when Zotero displays a capture icon, but can't actually save the citation. When the user clicks the capture button Zotero shows an error message and suggests consulting the list of known translator problems.

This usually happens when a site that previously worked with Zotero changes its metadata format, temporarily "breaking" the Zotero capture function. Zotero detects the metadata on the page, and "thinks" it knows how to save it, but because the site has changed Zotero cannot actually save the reference. (As I wrote this chapter, EBSCOhost, the company that produces many of the research databases I use most often, changed the format of its data. My attempted citation captures with Zotero either failed or didn't show an icon at all, seemingly switching back and forth on a daily basis. This situation lasted a few weeks.)

The short-term workaround for this problem is to use one of the methods I recommended above: either use the database's native export function instead of the Zotero capture icon, or if possible grab the citation from a different database. The actual solution takes a bit longer: report the problem in the Zotero discussion forum if no one already has, and be patient. The Zotero developers usually catch up with these problems quickly, often within a couple of weeks. The next Zotero update will probably include a new version of the translator to correct the problem.

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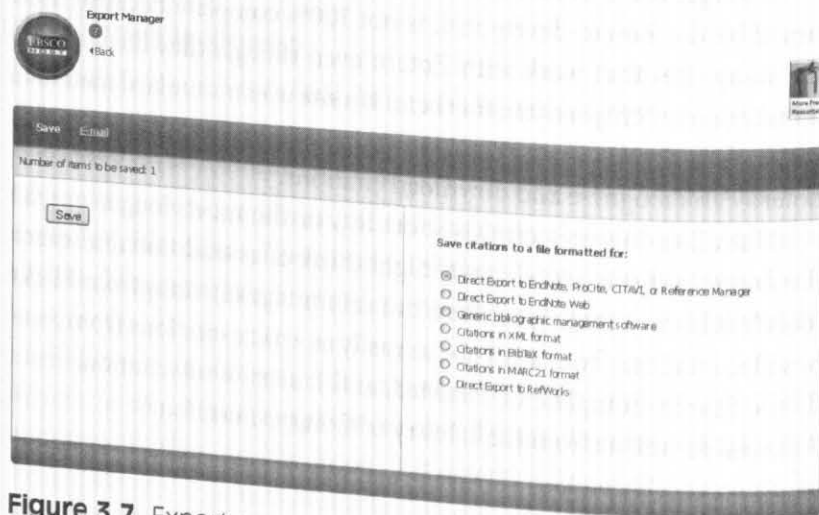


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Saving Citations: Web Pages

All of the above applies to capturing citations from sites like research databases, catalogs, online encyclopedias and booksellers—sites that include that vital metadata for Zotero to scan and capture. Researchers often need to cite sites that Zotero’s translators don’t automatically detect and pages that don’t include citation metadata: what we might call “plain old web pages” (as opposed to a citation page from a catalog or database). Fortunately Zotero is prepared to handle this situation; saving a web page as a reference just takes an extra click and probably a little editing.

First, browse to a web page that you want to save in your library. In my classes for journalism students I often go to CNN.com and choose any story from the front page as an example. Zotero doesn’t display a capture icon for any pages on this site, but it’s still possible to save the citation.

Open Zotero. Look at the row of buttons above the middle panel and note the button just above the column header “Title” in your library. It’s a light blue page icon with a tiny green plus sign: “Create new item from current page.”

Click this button to save a new Zotero reference from the page currently displayed. A new item of the type “Web Page” will appear in your library. Zotero can save the URL, the title (from the page’s <title> tag, the same text that appears in your browser’s title bar), the date of access, and a “snapshot” of the page: a copy of the entire page saved as an attachment. More about that below.

There are a few key pieces of information that Zotero can’t save automatically in web page citations. After you’ve captured the citation, look at the Info tab in the right panel. It lacks an author name, a date of publication, a *website* title (as distinct from the *page’s* title), and possibly other information that your bibliography might need.

Fortunately you can add this information yourself by clicking on the missing element and just typing or copying and pasting it in. If you saved a news story as in the example, the site probably gives an author name and publication date which you can paste in. The page’s title sometimes needs editing too: CNN stories include an extraneous “—CNN.

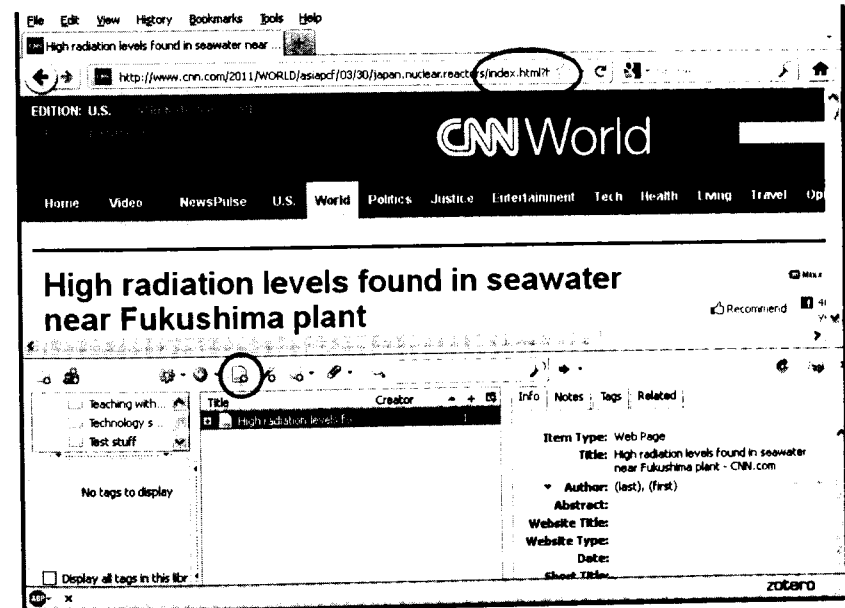


Figure 3.8. Saving a web citation. Notice that there's no Zotero capture icon in the address bar, but you can save the citation using the Create New Item button at the top of the Zotero pane. Add needed information like author and date by typing it into the right column.

com” in the page title that I would delete to make the bibliography a bit neater, and I add “CNN” or “CNN.com” as the website title instead.

(One hidden trick for websites and other online sources: clicking the URL label in the right column—not the actual URL, but the word “URL” itself—will open that site in your browser.)

Add by Identifier: Saving Citations by Number

Some types of references have unique ID numbers that can be used to locate them easily online. Most books have International Standard Book Numbers (ISBN), codes that booksellers use to identify a specific edition of a specific title (you can see one on the barcode on the back of this book if you’re reading the physical print edition). Many online documents have a Digital Object Identifier (DOI), a number like “doi:10.1000/182” that can be included in citations as a permanent way

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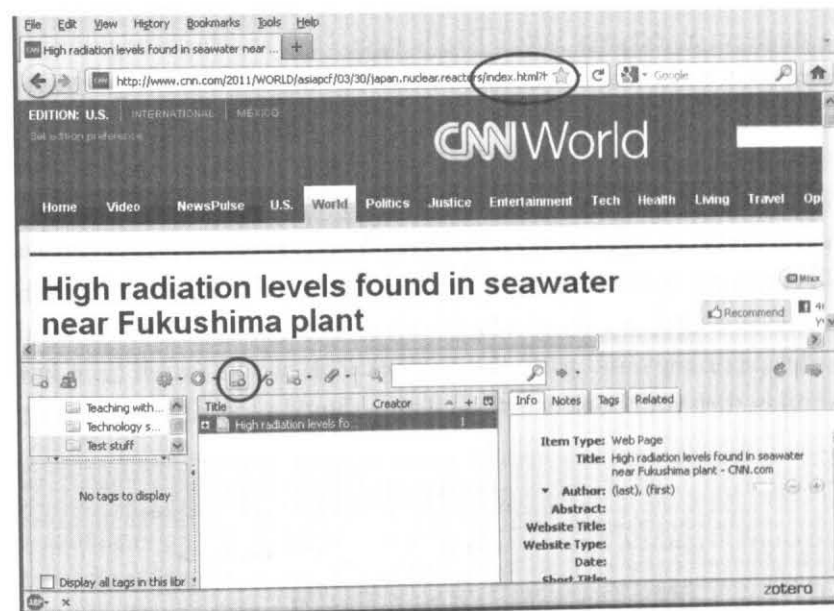


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to locate an object even if its URL changes. Each article in the PubMed database for medical researchers includes a PubMed Identifier (PMID) for similar purposes.

If you have a book with an ISBN or an article with a DOI or PMID, Zotero can automatically capture all its citation information for you. Above the center column of your Zotero library, to the right of the “Create New Item From Current Page” button we used in the previous section, you’ll see a small button that looks like a magic wand. Click the wand and type or copy and paste the number. Zotero will search for a few seconds, then your book or article citation should appear in your library.

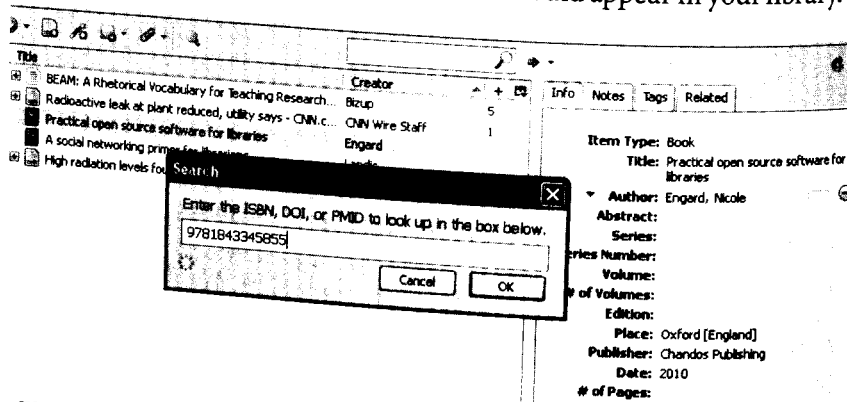


Figure 3.9: Use the magic wand button and enter an ISBN, DOI, or PMID number to automatically download a citation.

To find your item, Zotero searches the appropriate database for the type of number you enter (WorldCat for ISBNs, the DOI resolver CrossRef for DOIs, and PubMed for PMIDs) and downloads the citation just like it would any other reference.

Some DVDs and CDs have ISBNs, and if they’re listed in WorldCat this feature will work for them as well. Zotero always saves them as item type Book, so (as always) check your saved citations and make corrections as needed.

Retrieving Citations for PDFs

Zotero can automatically retrieve citation data for *some* PDF documents by searching for them in Google Scholar. This is useful for researchers

with large collections of saved articles who are using a reference manager program for the first time.

Drag PDFs into the Zotero pane—open the Zotero window, and drag some PDFs from your desktop into the center column. The files will be copied into the Zotero library, but as standalone items, not citations.

Next, select and right-click the PDFs inside the Zotero library. From the popup menu, choose “Retrieve Metadata for PDF.” This (rather unintuitive menu item) will cause Zotero to search Google Scholar for matches. Zotero creates citations for any PDFs it can match, attaching the original file to the new citation.

Creating and Editing Citations

Sometimes it’s not practical to search for an item online in order to add it to your library. You may have the book in your hand and not want to bother looking it up in a catalog. You could be citing an item that doesn’t appear in any online search tools, like a personal interview, an image or an unpublished manuscript. There are easy options for handling either case.

At the top of the center column of the Zotero pane, above the “Title” label in your library, you’ll see a green plus sign button: the New Item button. (Zotero uses the common convention of using a green plus sign on any “create new something” buttons. In this case it’s the whole button; in other cases it appears in the bottom right corner of buttons.) Click this button to create a new empty reference in your library. A menu appears with the most common reference types listed first: Book, Book Section, Document (a generic “catch-all” reference type) and a few different kinds of articles. A “more” choice appears at the bottom of the list, giving access to most of the other reference types. Choose the item type you need (we’ll use Book in this example) and a blank reference of that type will appear in your library. If you need to change an item’s type, click it to see a drop-down menu with all possible types and select the one you want.

Your new item’s information appears in the right column ready for you to edit. The left side of any citation’s information consists of labels (or “fields”) like Title, Author, and Publisher; these cannot be changed

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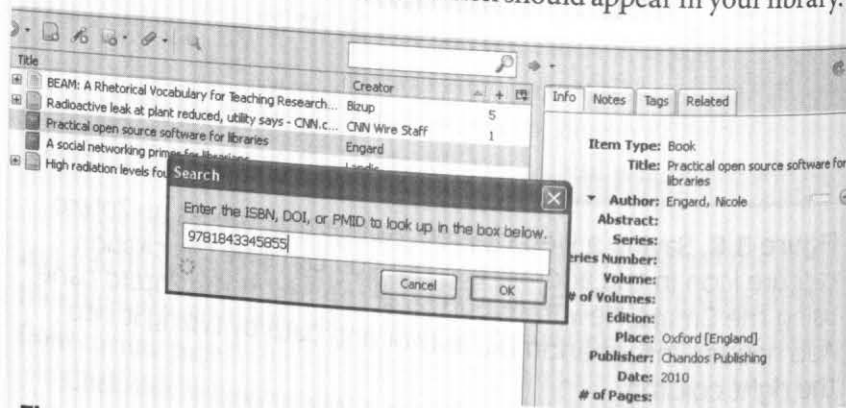


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Your new item’s information appears in the right column ready for you to edit. The left side of any citation’s information consists of labels (or “fields”) like Title, Author, and Publisher; these cannot be changed

(except for Author, which can be changed to Editor or a few other choices). The right side, which is blank in your new citation, contains information that can be edited just by clicking next to the label. Click in the blank next to the label Title and type in the title of a book.

Press Tab to move to the next field, the Author's last name. Type the last name here, then tab to the first name and fill that in. You can fill in the entire citation just by tabbing through. Skip anything that doesn't apply: if your book doesn't have a series title or volume number, it's fine to leave those fields blank. When finished entering information, just click outside the text areas or press Enter.

Editing an existing citation works the same way as typing a new one. To edit any citation, whether one Zotero has saved or one you've typed in yourself, click on the text and make your changes. Press Enter or click outside the text again when done. Zotero automatically saves your changes as you edit or create items.

Each item type has some variation in the fields it includes. Change your book to a journal article by clicking the label Book and scrolling down the menu to choose Journal Article. Zotero adds a Publication field, Volume and Issue numbers, and Journal Abbreviation. (You'll also notice the icon change to a white page image in your library list in the center column.)

Look back at the Author label again. This field has a few extra buttons because of the varying types of "authors" you might encounter. The Author label is the only label that can be changed: click the word Author and you'll see other choices like Editor, Translator or Contributor. Change this as needed. (I'll continue to call this field Author for simplicity, but your reference may have an Editor or another label here.)

The Author field includes a last name and first name, but some works may not list an individual's name as author: a report might simply be credited to the U. S. Department of Education or to Georgia State University (this kind of author, an organization or other non-individual entity, is called a corporate author). To the right of the author's first name field you'll see a small white oblong button. Press that to change the two "last" and "first" fields to a single name field or back again. Use the single field for a corporate author name and the last-first fields for individual names.

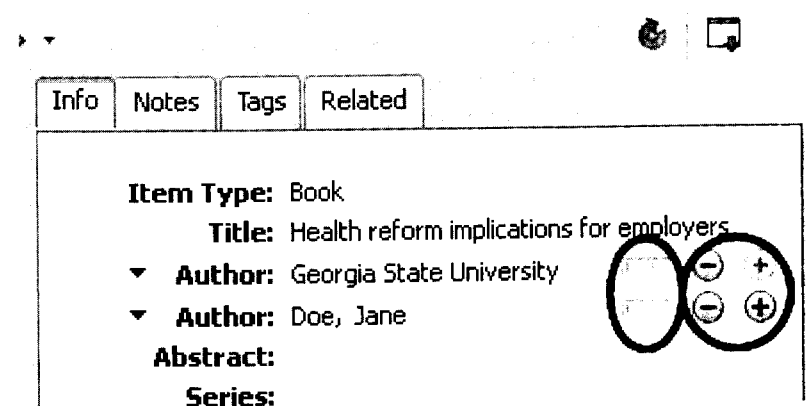


Figure 3.10. Use the small buttons to the right of author names to switch between a corporate author and an individual with first and last names. Use the plus and minus buttons to add or remove additional authors.

To the right of that button are two more: a plus and a minus sign. These buttons allow you to add additional Author fields. This is useful in several cases: many journal articles are written by multiple authors; a book may list authors, an editor, translator and other contributors; and a video recording citation may list a director, producer, screenwriter and actors. As you might have guessed, click the plus button to add as many additional authors as you need and the minus button next to any author to remove it.

One common correction you may need to make in database citations saved by Zotero is capitalization. Most library catalogs provide titles in sentence case: first letter and proper nouns are capitalized but all else is lowercase. Some article databases provide titles in all caps. You'll need to adjust the capitalization appropriately to the citation style you need (Zotero leaves capitalization correction up to you, since it can't tell what words are proper nouns).

Right-click the text of a title in your library to see the Transform Text menu, which can set the title to Title Case (all first letters capitalized, except words like "and" and "the") or to all lowercase. Make any further edits you need by hand.

(except for Author, which can be changed to Editor or a few other choices). The right side, which is blank in your new citation, contains information that can be edited just by clicking next to the label. Click in the blank next to the label Title and type in the title of a book.

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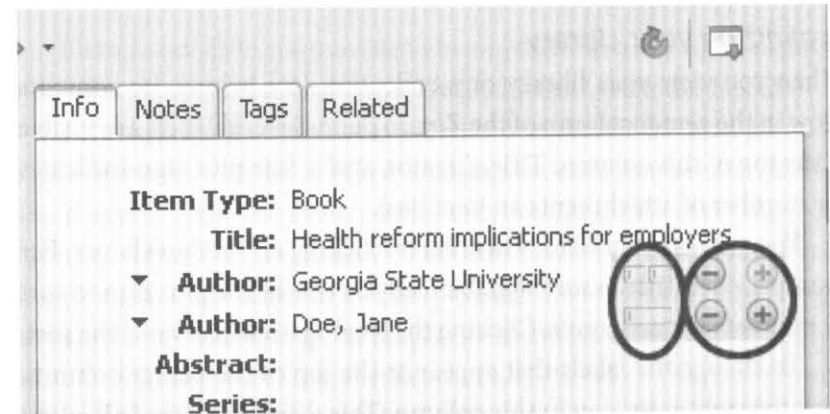


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One common correction you may need to make in database citations saved by Zotero is capitalization. Most library catalogs provide titles in sentence case: first letter and proper nouns are capitalized but all else is lowercase. Some article databases provide titles in all caps. You'll need to adjust the capitalization appropriately to the citation style you need (Zotero leaves capitalization correction up to you, since it can't tell what words are proper nouns).

Right-click the text of a title in your library to see the Transform Text menu, which can set the title to Title Case (all first letters capitalized, except words like "and" and "the") or to all lowercase. Make any further edits you need by hand.

Organizing your Library

When you view your library or a collection (see below), its contents show in the center column of the Zotero pane. Several labels are visible at the top of this column: Title, Creator, and + (the plus sign indicates the number of attachments an item has).

You can sort your library in order by clicking any of these labels. For example, click Title to sort alphabetically by title or the plus sign to sort by number of attachments. Clicking the label again will reverse the sort.

To change the labels that appear at the top of the center column, click the rightmost icon in this column. This displays a list of all labels to choose from, with the currently displayed labels checked. Choose the labels you wish displayed by clicking them to toggle them on or off. Choose Restore Defaults at the bottom of the list to reset the column labels to Title, Creator and + again.

Collections

Since citations are so easy to save, a Zotero library can quickly get very large. Fortunately, organizing references into lists or “collections” is easy. A collection is simply a list of library items, such as all the references for a particular project or class. You can create as many collections as you need, and an item can be in more than one collection at a time if needed.

To create a collection, click the “New Collection” button at the top left of the Zotero pane. It looks like a yellow folder with a tiny green plus icon. Type a name for the new collection and press Enter or click OK.

Your new (empty) collection will be selected automatically when you create it. Select any collection by clicking it in the left column. When a collection is selected, any new items you create or save will go into the new collection. At any time you can view your entire library, including all items in collections, by clicking My Library again.

You can also add items to a collection by clicking them in the center column and dragging them to the collection in the left column. If you try to drag items into a collection that already includes them, you’ll see a “no” circle/slash icon. To see whether an item is already in one or more collections, select it by clicking, and hold down the Control key. The collections that contain that item will highlight in yellow.

Get a list of all items that aren’t in *any* collections by right-clicking your library and choosing “Show Unfiled Items” from the menu.

Although collections are represented with a folder icon just like a directory on your hard drive, a collection does not behave exactly like a usual computer folder. A file on your computer can only exist in one folder at a time. A Zotero item can exist in multiple collections simultaneously. A collection is simply a list of items, and items can be on more than one list: for example, I can create a “Georgia history” collection and a “Civil War” collection and include a citation in both collections without making a duplicate of it.

You can create collections within collections by right-clicking any collection and choosing “New subcollection.” You can also rename or remove a collection via the right-click menu. Removing a collection does not delete the items it contains from your library, it just removes the list.

I find it useful to make a collection for each topic or project for which I am doing research. I have a “Pleasure reading” collection for novels I want to remember to read someday; I save citations from Worldcat or Amazon as I come across interesting books (which takes up much less space than a stack of books on my nightstand). Since I provide help for Zotero users, I also have a “Test stuff” collection to which I save citations for demonstrations or troubleshooting, so that I can easily find those items to delete when I finish.

Tags

If you have ever shared photos on a site like Flickr or Facebook you’re familiar with the concept of “tagging” items: adding keywords—“tags”—to make them searchable. Librarians, of course, have been tagging information sources since long before computers existed, in the form of subject headings, author names and other information added to catalog records to make books and articles easier to find.

Tagging items in a Zotero library serves the same purpose: tags simply add additional information to a library item for easier searching, grouping or organizing. While labels like authors, titles and publisher names are pre-determined, tags are one form of metadata—extra, searchable information attached to the item—that the researcher can

customize herself according to her own needs and preferences. Tags will never appear in the bibliography; they exist solely to aid searching the library. Citations are the only type of item that can include tags.

Select any citation in your library and click the Tags tab in the right column. Any existing tags on this item display here. You can add your own tags just by clicking the Add button and typing a word or phrase to describe the item, like “monkeys” to describe a book on monkeys, or “English 101” to tag an item you’ll be using in a particular class. Remove a tag by clicking the minus button next to it.

It is helpful to use consistent tags to describe similar items so that you can be sure to catch all similar items with a single search. For example, if I tag some items for my class “English 101” and others “engl101,” searching for “english” will miss the latter tag. (Librarians are already familiar with this practice of using a “controlled vocabulary,” which simply means using the same set of consistent terms to aid searching.) Zotero assists with this by suggesting existing terms that match what you have already typed as you enter tags. You can choose an existing term by clicking one of the suggestions as they appear.

You may find that some of your citations already have tags: by default, Zotero saves subject headings and keywords from catalog and database records as tags. You can disable this behavior if you prefer by choosing Preferences from the action (gear) menu; on the General tab, uncheck the box for “Automatically tag items with keywords and subject headings.”

At the bottom of the left column you’ll see a tag browser and search box. The tag browser, the list of tags below your collections, shows the tags for all the citations currently displayed in the center column. If you select My Library, the browser shows all the tags in the library. Selecting a collection displays only the tags in that collection. Click any tag to show only the citations tagged with that term. Select more tags to narrow the match further. (On small screens, the tag browser shows only a small fraction of the entire set of tags. Use the mouse wheel to scroll up and down or drag the top edge of the tag browser up to enlarge it.) Click “Deselect all” to clear your selections and show the entire library/collection again. The search box allows you to search for terms to select in the tag browser.

The most obvious way to apply tags is by subject, creating tags that describe the content of the item: “monkeys,” “cystic fibrosis,” or “fantasy fiction.” Tags can be personalized and idiosyncratic, however, so feel free to apply them as needed. I have already suggested tagging items with the name of a course or project, like “English 101,” but tags can also be added (and deleted) to keep track of their status in your workflow: “needed,” “ordered,” “obtained,” or “read.” History students might need to tag sources “primary” or “secondary.” Sources for a thesis could be tagged “chapter 1” and so on. (Collections can also be used in many of these ways—each researcher can decide what works best for him.)

Related Items

Library items can be linked to each other by marking them as “related.” Related items are any items that you choose to indicate as relevant to one another in some way.

To mark items as related, click an item’s Related tab (next to the Tags tab) in the right column and click Add. This brings up a window to browse and select another item from the library. Selecting the item marks both items as related to one another, adding a link to each other’s Related tab. Clicking an item on the Related tab navigates back and forth between items quickly.

You might want to mark all the items in a series as related, for example. Other uses could include marking author biographies or other secondary sources related to their primary work, marking all items for a particular project as related, or alternate editions of a given work.

Attachments, Notes and Snapshots

So far we’ve examined all the ways to put citations into your library, but Zotero can store and organize almost any file on your computer, not just bibliographic references.

Think of your Zotero library like a file box. You already know how to put references, like index cards containing your citation information, into the box: save it from a catalog, database, or other website, or type it by hand. These references are one type of item in your library, like digital note cards.

The file box can store other kinds of items as well: any file you have on your hard drive can be stored as an item in your Zotero library. You can also “attach” these items to your references, like stapling a document to a note card. Probably the most common use for this feature is to save an article citation and attach a PDF copy of the article, so that the citation and article are stored together.

Zotero items can include:

- Citations
- Files: often PDFs, but also images, documents, audio files or any other digital file
- Notes: you can type your own notes, and many saved citations include notes containing text that doesn’t go into any of the existing Zotero fields
- Web links: this includes the URL and the date you created the link
- Snapshots: copies of a web page that include graphics, your own highlighting and annotations.

Attachments

Any of these items above can either exist independently or be attached to citations. An item that is attached to a citation remains associated with it: if you move or delete a citation with attachments, you also move or delete the attachments. A citation with attachments has a plus sign or arrow next to it in your library list. Click the arrow or plus to show or hide an item’s attachments.

Zotero sometimes refers to the attachment as the “child” and the item to which it is attached as the “parent.” An item that is not attached to a citation is a “standalone” item.

View any file attachment by double-clicking it in your library (see also “Viewing attachments and looking up items” below). Notes automatically display in the right column when you select them.

To create a new attachment, select a citation in your library. Click the New Child Attachment button, which looks like a paper clip. From here you can attach a snapshot of the current page, a link to the current page, a stored copy of a file, or a link to a file. We’ll look at each of these cases.






Title	Creator
 BEAM: A Rhetorical Vocabulary for Teaching Research...	Bizup
 Copyright of Rhetoric Review is the property of Ta...	
 BEAM: A Rhetorical Vocabulary for Teaching Resea...	
 BEAM: A Rhetorical Vocabulary for Teaching Resea...	
 Bizup - 2008 - BEAM A Rhetorical Vocabulary for T...	

Figure 13.11. This reference has four attachments: a note, a snapshot, a link, and a PDF.

Snapshots

A “snapshot” is a copy of a single web page saved to your library as an item. It includes all the text and images from the page, captured exactly as it exists at the moment you create the snapshot. This is handy for archiving web pages, to keep a record of them in case they disappear later, for offline access, to create a searchable database of a set of pages, or to add your own notes and highlighting to a page.

Snapshots are a duplicate of the currently viewed page, saved to your library on your local computer. Like all attachments, they will synchronize with your online library and use some of your storage quota (see chapter 5). Zotero does its best to preserve the site’s original formatting. The results are usually good but not always perfect.

When you save a citation from a web page (see “Saving citations: web pages” above), Zotero automatically creates a snapshot of the page and attaches it to the citation. You can also attach a snapshot to any existing citation by:

- browsing to the page you want to capture,
- selecting a citation in your library,
- clicking the paper clip (“New Child Attachment”) menu button above the center column,
- and choosing “Attach Snapshot of Current Page” from the menu.

Zotero will save a snapshot copy of the page and attach it to the selected citation. (You can also make a snapshot of a single image on a page by right-clicking it, choosing Zotero from the popup menu, and then clicking Save Image As Zotero Item.)

The file box can store other kinds of items as well: any file you have on your hard drive can be stored as an item in your Zotero library. You can also “attach” these items to your references, like stapling a document to a note card. Probably the most common use for this feature is to save an article citation and attach a PDF copy of the article, so that the citation and article are stored together.

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- Files: often PDFs, but also images, documents, audio files or any other digital file
- Notes: you can type your own notes, and many saved citations include notes containing text that doesn’t go into any of the existing Zotero fields
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- Snapshots: copies of a web page that include graphics, your own highlighting and annotations.

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Zotero sometimes refers to the attachment as the “child” and the item to which it is attached as the “parent.” An item that is not attached to a citation is a “standalone” item.

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To create a new attachment, select a citation in your library. Click the New Child Attachment button, which looks like a paper clip. From here you can attach a snapshot of the current page, a link to the current page, a stored copy of a file, or a link to a file. We’ll look at each of these cases.

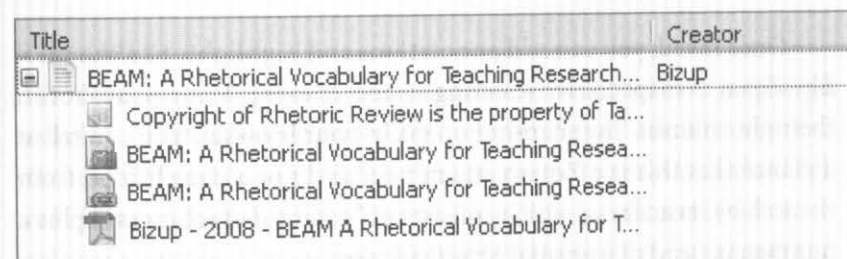


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Zotero will save a snapshot copy of the page and attach it to the selected citation. (You can also make a snapshot of a single image on a page by right-clicking it, choosing Zotero from the popup menu, and then clicking Save Image As Zotero Item.)

Once saved, you can add annotations and highlights to a snapshot file. Open a snapshot by selecting it and clicking View Snapshot in the right column. The snapshot opens in your browser. You can tell at a glance that this is a Zotero attachment and not a page loaded from the web by its address, which consists of “zotero://attachment/” plus a number, instead of a normal http:// address.

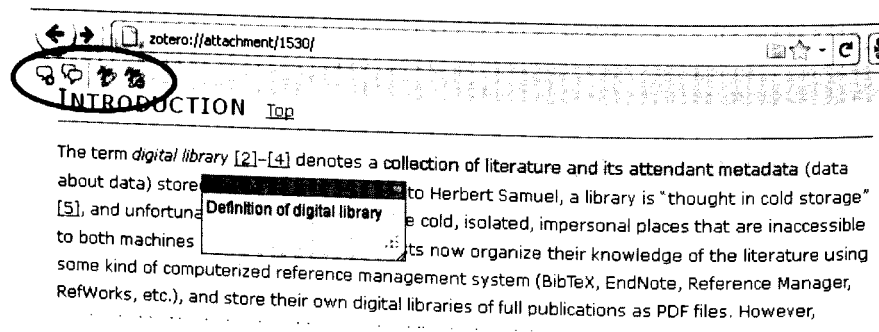


Figure 3.12. Use the annotate and highlight buttons at top left to mark up snapshots.

At the top of the page are four buttons (figure 3.12). The first two are used for annotations, small notes within the page. Click the Create Annotation button, the small white speech bubble with the green plus sign. A blank yellow note, like a Post-It, appears on the page wherever you click next. Click on the note and type as much text as you want. Resize the annotation by dragging the right corner. Collapse (hide) it to a small icon by clicking the button in its upper right corner, and display it again by clicking the icon. Move it around the page by clicking the arrow next to the collapse button and moving the mouse, then click again to place it. Delete the annotation by clicking the button in its top left corner. The button next to the Create Annotation button, two white speech bubbles, will collapse or display all the annotations on the snapshot.

Add highlighting to the snapshot by clicking the third button at the top of the page, the yellow highlighter icon. This button toggles highlighting on: any text you select will be highlighted in yellow until you toggle the button off again. The fourth button toggles “unhighlighting” on: while active, it removes highlighting from any text you select.

Web Links

A link to a page can also be saved as an attachment, without creating a snapshot. To attach a simple web link to any citation: select the citation, click the Create New Child Attachment menu (the paper clip button), and choose Attach Link to Current Page. Zotero will create a link attachment, which consists only of a title, URL, and dates of access and last modification, plus a space to add text notes. Zotero sometimes adds link attachments to citations automatically (for example, citations saved from Amazon.com always include a link attachment).

Stored Files

To save a file into your library, simply drag it from a folder on your computer into your Zotero pane and release it. This copies the file into the library leaving the original where it is. Drop it on top of a citation to attach it, or into a collection or between items to create an independent or standalone item.

You can set the preferences so that Zotero will automatically save article PDFs along with citations when available. Click the gear menu and choose Preferences, and make sure “Automatically attach associated PDFs and other files when saving items” is checked. When this feature is set, Zotero will attempt to download the PDF copy of an article and save it as an attachment whenever you save a citation.

Two important notes about this feature: first, it only works with a few research sites (at least, it does not with most of the ones I use regularly). For example, it works well with JSTOR but not the EBSCO databases. Your mileage will vary depending on which sites you use for most of your research.

Second, remember that attachments do take up disk space. Stored files will sync with your library, and will take up storage space in your server quota (see chapter 5).

Your attachments are saved in subdirectories of your Zotero directory, either within your Firefox profile folder or in the program directory of the standalone Zotero client. Right-click any stored attachment in the library to get a pop-up menu. Among the other choices, you’ll see View, which opens the file in your web browser (if a PDF or HTML

Once saved, you can add annotations and highlights to a snapshot file. Open a snapshot by selecting it and clicking View Snapshot in the right column. The snapshot opens in your browser. You can tell at a glance that this is a Zotero attachment and not a page loaded from the web by its address, which consists of “zotero://attachment/” plus a number, instead of a normal http:// address.

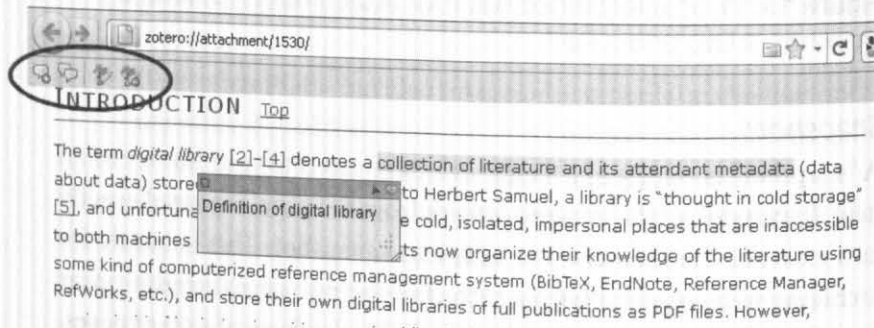


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You can set the preferences so that Zotero will automatically save article PDFs along with citations when available. Click the gear menu and choose Preferences, and make sure “Automatically attach associated PDFs and other files when saving items” is checked. When this feature is set, Zotero will attempt to download the PDF copy of an article and save it as an attachment whenever you save a citation.

Two important notes about this feature: first, it only works with a few research sites (at least, it does not with most of the ones I use regularly). For example, it works well with JSTOR but not the EBSCO databases. Your mileage will vary depending on which sites you use for most of your research.

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Your attachments are saved in subdirectories of your Zotero directory, either within your Firefox profile folder or in the program directory of the standalone Zotero client. Right-click any stored attachment in the library to get a pop-up menu. Among the other choices, you’ll see View, which opens the file in your web browser (if a PDF or HTML

file) or in the appropriate application (for example, a PPT file opens in PowerPoint). The Show File menu choice opens the folder on your hard drive that contains the attachment.

Article PDFs saved from databases often have cryptic filenames. To easily give an attached file a human-readable filename, right-click it and choose “Rename File from Parent Metadata.” This renames the file according to its parent attachment: for example, from “ELI7041.pdf” to “Educause-2008-7 Things You Should Know About Zotero.pdf”. This is an easy way to give your attachments filenames you can recognize at a glance.

Indexing PDF Attachments

Zotero can search the full text of PDFs in your library if you install an optional component. This is very easy and only takes a couple of clicks. Open your Zotero preferences from the gear/action menu and choose the Search tab.

In the section labeled PDF Indexing, click the Check for Installer button (figure 3.13). Within a few seconds, a confirmation window will appear asking whether you wish to install the PDF indexing components. Click Install and wait for the components to download. This may take a few minutes, but you can minimize the window and ignore it while it sets up.

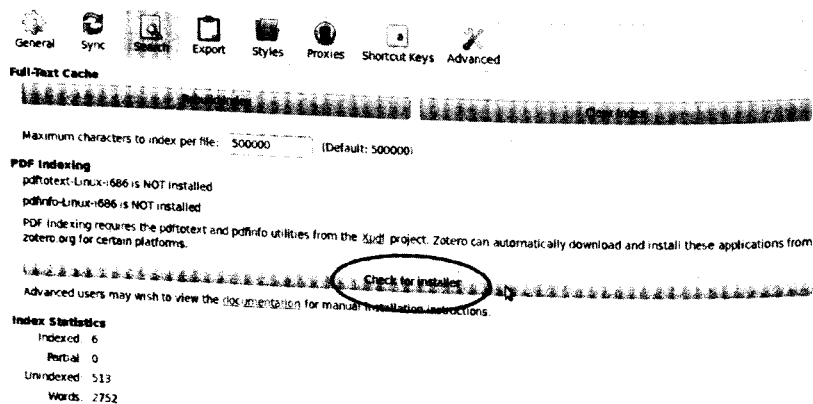


Figure 3.13. To make PDFs searchable in Zotero, click the Search tab on the Preferences screen and click Check for Installer.

Once installed, you can “index” any PDF in your library to make it searchable. Select a PDF attachment in your library. In the right column details you’ll see a line labeled “Indexed: No.” Click the button with two green arrows next to the “No” to index the file. Zotero “reads” the PDF briefly to make its text searchable and changes the “no” to “yes.” You can also index a PDF by right-clicking it in your library and choosing “reindex file” from the menu.

Of course, PDFs must contain text to be indexed. A PDF that contains only images cannot be indexed or made searchable.

File Links

A file link is an attachment that consists of only a link—a pointer—to a file. In other words, the attachment just refers to a file elsewhere on your computer instead of copying it into your library. The advantage of a link is that it takes up no space in your library, but the disadvantage is that if you access your library from a different computer, linked attachments are unavailable. Create a file link by selecting a citation and choosing “Attach link to file.”

Notes

A note is a library item that consists solely of text. Notes may be either standalone items or attached to citations. Create notes in several different ways:

- Click the yellow note button at the top center of the Zotero pane and choose “Add standalone note” or (if a citation is selected) “Add child note.”
- Select the Notes tab in the right column while viewing an item, and click “Add.”
- Zotero often automatically creates notes when saving items from online sources. If an online citation contains information that doesn’t fit into any of Zotero’s fields, Zotero will sometimes save the “extra” information into an attached note.

To edit the contents of a note, just type in the text window (figure 3.14). Use the toolbar above the text window to format your