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How to think about *PECE*

PECE (pronounced "peace") is a powerful platform where you can collect and think about data in many ways, but it can be difficult to get started. Parts of *PECE* will feel *Wikipedia*-like, while others resemble *Zotero* or *Wordpress*. It can be hard to see how all the different parts fit together, so a good mental model of what *PECE* is will take a little time to develop. This document is meant to help you develop this model.

A good way to think about *PECE* is as an online platform of tools that brings together some of the key functions that qualitative researchers perform with their data. It is meant to help you do many of the things you already do.

But, it's also meant to be *more* than this. *PECE* is built in a way that opens up new possibilities for working with data. In short, *PECE* guides your work towards the collaborative curation of artifacts. More about what this means later.

Many different projects use *PECE* for different purposes. Each of these projects has its own **instance** of *PECE*, a more-or-less self-contained installation of *PECE* that makes its functions available for a particular project. There is an instance of *PECE* (http://worldpece.org/) where the work of conceptualizing, designing and building *PECE* is done. The Asthma Files (http://theasthmafiles.org/) is a separate instance of *PECE* as is the Disaster STS Network (http://disaster-sts-network.org/). infra**S**truc**T**ure**S** (http://stsinfrastructures.org/) is an instance of *PECE* set up for STS work expansively conceived. In the beginning, you will probably only be dealing with one instance of *PECE*, such as infra**S**truc**T**ure**S**. Below, I will talk about "*PECE,*" which you should read as "your instance of *PECE*."

What do researchers do with data?

If *PECE* brings together some of the "key functions" that researchers perform, then what might some of these functions be? Imagine what you might do when you sit down to write a research paper. As you prepare to write a paper, one of the things you would do is download a PDF article relevant to your topic. After locating the PDF, you might go through some of the following steps:

1. Download the PDF on to your computer, and place it in an appropriate folder or add them to a reference manager like *Zotero*.
2. Read the article, highlight interesting sections, and take notes in a *Word* document.
3. Work through your collection of notes and PDFs to draft a section of your paper.

4. Send your drafts to colleagues by e-mail to get feedback.
5. Share the paper on your personal website or a site like *Academia.edu*.

Depending on the nature of your research, you might go through similar steps with photos, audio files, interview transcripts, web pages, scans of paper documents, or other things.

Across these steps, you've performed three basic tasks:

1. **Storing**: In order to begin working with a PDF, you have had to put it somewhere it is easily accessible to you. In the process, you may have also done some initial categorizing, for instance by putting the PDF in a working folder for your paper.
2. **Analyzing**: The next basic task was transforming the contents of the PDF into a form that works for your purposes. This includes reading the content of the article, posing questions, tagging and highlighting useful sections, and making notes that begin to build your analysis.
3. **Publishing**: Another task is to convert this work into a new form for other people to store, consume, and re-work in their own ways.

In reality, these tasks rarely take place in this linear order. You may revisit and recategorize an article, show drafts to peers and do more writing and reading, and so on. But all scholars do these things with pieces of data constantly.

Because we are constantly doing these three things, many of us will have a set of familiar tools to do these tasks:

1. **Storing**: For some people, storage just consists of a big download folder full of hundreds of files. Others might have complex filing systems organized by author, date, or topic. Some people will store their data on their local drive, while others will place things in the cloud with services like *Dropbox* or *OneDrive*.

   Storage is also when we do an initial analysis. To get a PDF on your local drive or cloud folder, you've made a judgement about the possible utility of its contents. When you place it in a specific folder, you've made an initial categorization of it based on its contents. Storage always entails a bit of thought about content, and how to categorize things at a different, "higher" logical level. This is necessary and productive, bringing different things into visible and durable relation. It also sets up patterns of blindness and forgetting (think of the last time you forgot about a file because you couldn't remember what folder you put it in, or a time when you moved a file from one folder to another because you read it anew, differently).

2. **Analyzing**: To read PDFs, most of us will use something like *Adobe Reader*. When it comes to note-taking, there are many possibilities. You might use *Adobe Reader* to do your highlighting and note-taking too, or maybe handwriting on a hardcopy is what feels right. A lot of people probably take notes using *Word, Evernote*, or *OneNote*, or use note-taking and tagging functions in apps like *Zotero* or *EndNote*.

Analysis is when we try to understand arguments and evidence, develop and ask questions about the data, and try to draw connections with other things. We rephrase ideas and re-categorize content to refine our grasp of a specific thing or the emergent shape of an argument.

3. **Publishing**: The ultimate end point for at least some of our writing is a finished work in PDF or DOC form. You might have a personal blog or a Twitter account where you post new thoughts and questions as well. You probably also share finished work, partial drafts, ideas, and notes over e-mail or *Google Docs* with peers as well.

   Publication is broader than getting a typeset version of your argument published in a journal or book. It is where the things you've put thought into enter into the work that other people are doing, i.e. something for them to analyze. Collaboration can be thought of as a kind of publication. It's also a decision about where you store your work. Is the best home for your work in a journal, your website, or maybe somewhere else?

Now we can answer the most immediate question: What does *PECE* do? It helps you store, analyze, and publish pieces of data.

The next question you have might be this: If I'm storing, analyzing, and publishing things with software that I already have, then why should I bother with *PECE*?

I'll answer using a classic STS argument: the tools and systems—the infrastructures—that we use for our data shape how we think about our data and what we can do with it. In fact, these infrastructures can shape our very sense of what counts as "data." So if, like many people, you do a lot of your work on your computer with Word, EndNote, and Google, then you are relying on a particular data infrastructure with particular affordances and constraints.

Here are some of the typical constraints and affordances of a usual *Word-EndNote-Google* setup:

1. It encourages individual storage and consumption. We tend to keep our own files and notes to ourselves for our own individual use. It's not impossible, but not necessarily easy to share the different types of data that you've collected.
2. It privileges traditional forms of publication. Even though we may informally share drafts of papers, notes, and snippets of ideas with each other, many of us will only consider a traditional product like a peer-reviewed journal article to be a "real publication." The way that *EndNote* and *Word* work together orients users towards the production of such a "finished" document, for instance in how they insert citations and generate reference lists. This workflow has few special affordances to disseminate intermediate or alternative forms of information, such as field notes, annotations, or interview transcripts.
3. It does not easily lend itself to collaboration, especially with people who we are not already in direct contact with. One of the things necessary for effective collaboration is a certain degree of standardization that collaborators can rely on. People working

together need to agree on things like whether to use e-mail or a shared *Google Doc* to work together. In collaborative social research, you may need to create a standard questionnaire that all investigators use. While it's not impossible to use something like *Word* to work together with others, anybody who has tried to co-write a paper with multiple authors know how messy things can become without some consensus about how things should be done.

We can now refine our answer to the question—what does *PECE* do? *PECE* lets you store, consume, and publish information *in ways that facilitate collaboration in many forms*:

1. *PECE* acts as a *storage and archiving platform* for text, images, audio, web links, and almost any other kind of data you can think of. It does so in a way that can (based on the privacy settings that you put in place) let other people easily access what you offer to the platform.

   Like *Dropbox* or *OneDrive*, *PECE* allows you to control who can access what you store on it: each piece of data can be public, private to you, or available to a select group of people. A major difference between *PECE* and cloud storage is that while something like *Dropbox* will keep a copy of files in the cloud on your local computer, *PECE* only stores data online.

2. *PECE* is a space for *analyzing* information. It has features to help you ask productive questions of data, whether it's yours or someone else's, share your questions and answers with others in a useful form, and let different people combine and synthesize what has been made available on *PECE* to create new knowledge and objects.

   Like *Zotero* or *EndNote*, *PECE* lets you enter all kinds of metadata about each piece of data, such as notes and tags, the name of the author or creator, the date of its creation and other bibliographic information, as well as geographical location information. In addition, many pieces of data can be annotated using sets of guiding questions that others have previously created in *PECE* or that could be created by you.

3. *PECE* is a way to make all kinds of information more *public*. *PECE* includes ways to give others access to your work, at whatever stage it is, invite collaborators, and make different kinds of information discoverable and linkable. *PECE* is also designed to help you experiment with different forms of publication.

   Like Word, PECE can help you produce essays that contain text, images, and references that resemble journal articles or book chapters. Like a web page, PECE makes it easy to create pages that include links to external sources on the web or to other things hosted on *PECE*.

Not everybody uses all of the features of software like *Word*, so not everybody will need or want to use *PECE* for all of their research tasks. You may choose to use *PECE* to only store and organize pieces of data, and use other software or platforms for the other stuff. *PECE* isn't

meant to be a replacement for your entire toolkit. But, it strives to do some key things well, and do them in a way that can foster collaboration and healthy research communities.

The Artifact

As you can see, *PECE* offers some key functions that researchers use in their work, and does so in ways that foster collaboration among them. Now, we're in a better position to think about what *more PECE* does. On *PECE*, collaboration is inseparable from curation. To do this, we'll closely look at a fundamental building block of *PECE*—the **artifact**—which will let us see some of the main ways that *PECE* facilitates "collaborative curation."

What is an **artifact**? Basically, an artifact is anything that can be uploaded and stored on *PECE*. These can be audio files, text field notes, videos, image files, or PDFs. Log in to your account, click "Dashboard", and you will find a list of artifact types, along with other types of content that can live on *PECE*.

An **artifact** is different from a file on your computer. In fact, storing something like a PDF or video on *PECE* involves *transforming it into an artifact.* You'll see the difference between a PDF and an artifact when you click "Add content" -> "Artifacts" -> "PDF Document" on your Dashboard. Whereas storing a PDF on your own Dropbox account only requires you to have a filename and select a folder to place it in, storing a PDF on *PECE* requires you, at a minimum, to provide the title, the contributor, a critical commentary, and set its license and permissions (how the artifact can be used and who can view the artifact on *PECE*.) In addition, you can (and should try to) add the name of the artifact's creator, the language, the fieldsite, its geographical location, and descriptive tags.

An **artifact** is different from just another file because it contains a lot of metadata. *PECE* asks for artifact metadata that is useful for the purposes of collaborative academic research, it exposes this metadata to you and other *PECE* users, and facilitates the discovery of artifacts using this metadata. It also allows users to add to the kinds of metadata that are associated with a given artifact.

In short, *PECE* asks you to turn the individual and relatively effortless work of *storing data* into the more public and slightly more demanding work of *curating artifacts*.

So, what are some of the benefits of working with metadata-rich artifacts on *PECE*, compared to more familiar alternatives?

Artifacts are **discoverable**. Rich metadata makes it easier to find not only the artifacts that you are looking for, but also artifacts that you didn't know were out there. For example, tagging an

audio recording of an interview you have done with keywords may help somebody else discover an interesting connection with photographs they have added to *PECE*.

Artifacts are **extensible**. The original contributor of an artifact does not have to be the only person who adds metadata or other information to it. Other users can add or change tags, location information, and other metadata, depending on access settings. All users can *annotate* artifacts, giving their own answers to questions pre-prepared on *PECE*, or adding their own questions. Because artifacts are extensible, different people can engage the same artifact in different ways. Most importantly, these engagements become part of the artifact, making these perspectives available for other people to draw from.

Finally, artifacts are **persistent.** They stay on *PECE* beyond any single user's time with *PECE*, and are available to be made part of new projects. A photo taken for one project can become part of the answer to an unforeseen research question, and an annotation of an article written by one person could inform a literature review being done by a future student.

This persistence extends to the contexts of each artifact's production. One of the benefits of having persistent metadata, including annotations, associated with an artifact is that it can help to prevent its decontextualization. For example, any photo is shot at a particular time and place by somebody for a specific purpose. The initial significance of a photo can easily become lost if all that is saved is the image file itself. Having persistent metadata makes it possible to access the life history of the photo, which can inform future analyses of it.

With the discoverable, extensible, and persistent artifact as one of its main building blocks, *PECE* is meant to help researchers turn the data they have into the elements of a curated collection of artifacts that facilitate and invite collaboration by others. When working on *PECE*, it can be helpful to remember this: building an archive on *PECE* is the same as building the potential for a scholarly community.

Your next step: Start exploring

Hopefully, you've now started to get a sense of what *PECE* is and how it works. The next thing to do is go try things for yourself. Go to your *PECE* instance. This may be infra**S**truc**T**ure**S** (http://stsinfrastructures.org), or the Disaster STS Network (http://disaster-sts-network.org/).

There, you can browse artifacts that have recently been contributed, or click the "Collaborate," "Analyze," and "Discover" tabs at the top of the screen to see what different groups on each instance of *PECE* are up to, what questions people are asking about their artifacts, and what artifacts have been contributed.

You can also check out the helpful resources that will walk you through getting things on to PECE. At *Resources: PECE Platform* there are an array of resources to help you get started,

including the user documentation, and a link to a playlist of YouTube videos that will show you how to annotate an artifact, create a group, and more.

http://stsinfrastructures.org/content/resources-pece-platform

Welcome to *PECE*!