Mashing Maps

*by Rachael E. Barlow**

Introduction

This is the story of a class at a small, liberal-arts college. The class attempted to do something meaningful with data for people living in the community nearby. The college is Trinity College. The nearby community is Hartford, Connecticut. The students in the class created five "Google maps mashups." One group of students mapped food resources in Hartford, everything from community gardens to grocery stores to food pantries (see Figure 1). Another group mapped houses in disrepair in Hartford's south end, along with the contact information of the absentee owners whose negligence had caused such deterioration (see Figure 2).

The question: why should those in the data world care about this rather small project at a rather small school? As a sociologist, I am inspired to bring in a little sociological perspective. Susan Leigh Star and James R. Griesemar talk about boundary objects, "objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites."[1] Sociologists who study science often talk in terms of upstream and downstream processes. Upstream processes refer to what happens before the point at which a technological innovation is considered "done" (ready for the marketplace, for consumption, etc.). Downstream processes refer to what happens after this pivotal, and as sociologists will note, socially-constructed point.[2]

I argue that mashups, although not objects in the ordinary sense (since they are digital, not material), are boundary objects. In the case of the Trinity-College class, mashups facilitated the cooperation of those inside the college's walls (faculty and students) with those outside (community members). These insiders and outsiders of academe approached such mashups while entertaining very different ideas about mashups what were good for. Yet despite these two groups' different perspectives and intentions, the mashups, "plastic enough to adapt to local needs," had the potential to appease both groups.

Upstream processes: making the maps

But to buy such an argument about the mashups' status as boundary objects, the reader needs to learn a little about the upstream processes of the mashups created by the students in this course. Long before the creation of these mashups, a Trinity-College professor and I composed a set of goals for the course we were going to co-teach. We wanted the students to learn something about cities generally and about Hartford specifically. We wanted students to develop technical skills for managing data, but also communication, networking, and problem-solving skills. And we wanted students to participate in the construction of the knowledge they gained in the course by working with and doing something for the local community.

Perhaps now is the time for a quick definition. In the Web 2.0 world, a mashup refers to the product one creates when mixing together the dynamic elements of preexisting websites. As Rich Gibson and Schuyler Erle put it, "in music, when you create a new song by taking the melody from one song and the lyrics from another, it is called a mashup. A lot of times things go poorly, but now and then the results are stunning.[3] The same, they explain, is true for web mashups. Remixing websites might produce something silly or extraneous, or something significant and revealing.

Hence, we titled our course Invisible Cities for a reason: so that students could experiment with rearranging data in ways that would allow them to reveal something about the city of Hartford that was otherwise invisible. Mashups seemed like a timely, if not faddish, means to this end. The whole idea of a mashup is to take what already exists, stir it around and create something not yet seen.[4]

Months prior to the beginning of the semester, the professor and I asked the leaders of two community organizations whether they would like to work with our class. The leaders agreed, but not for the reasons that mattered to us. After all, why would these organizations care about what privileged Trinity students learned? Instead, the leaders of these groups were primarily concerned with furthering their own organizational goals: informing and mobilizing residents in the south end of Hartford.

The course began and the students learned that they were expected to work with and for community groups. They also learned that their work would take the form of maps: collecting data for them, arranging that data in spreadsheets, and "mashing" the data with Google maps using the plethora of online tools that make such mashing easy. During the early part of the course, we trained students on the array of skills they would need to make all of this possible: they needed to know what a Google mashup was and how to make one, what a spreadsheet of data looked like and how to manage it, and what concerns Hartford residents and how to work with them.

A month into the semester, we arranged for the students to meet with the community-organizations' leaders to exchange ideas about what kind of data would make sense for a map mashup. This meeting allowed us to hear what issues had relevance for these organizations. The list was long. They imagined maps that plotted, among other things: banks with free checking (for residents who otherwise cannot afford a checking account), known places where buses idled (emitting pollution and sickening kids), voting stations throughout the city (that were otherwise not well advertised), the location of advocacy groups (like themselves), and places for city residents to access the Internet (to access these maps and the larger web). After the meeting, when the class reconvened, the students faced the task of deciding what maps they could make, wanted to make, and mattered most.

Two of the maps that "won" in this contest are the two I mentioned at the beginning of this article. I mentioned these two because they represent different ways students went about mashing. The students who created the food resources map inherited an Excel spreadsheet from a third-party organization in Hartford that had already collected its own data on locations to access food in the city. The students did not have to collect data anew; instead, their work involved rearranging the Excel file so that it was readable by the online tool (called "Zeemaps") they had chosen to make their mashup. But the students who created the mashup of abandoned properties did have to collect data. One of the organizations with which we collaborated had given this latter group of students an initial list of properties it had identified as problematic. But the students had to locate a large amount of additional data on their own: data from Hartford's assessor that confirmed whether the houses had recently changed ownership, data from the Connecticut Secretary of State about whose names were behind many of the Limited Liability Corporations listed in place of owners for some of these properties, and data from a recent "City Scan" project that described the character of these properties' blight (broken windows, lawns in need of mowing). Finally, the students turned to the phonebook to get owners' contact information, since the organization that requested the map wanted community members to call these owners and ask them to clean up their properties.

Downstream processes: after the maps
But let us put aside for a moment the upstream processes that led to the creation of these mashups and examine their downstream processes, what occurred after the mashups were online, accessible to the public. The mashups, once created, were both opportunity-makers and pressure-cookers. The attention they received from the local media and the college administration allowed those of us who taught the course and the students enrolled in it to receive more accolades than any of us perhaps deserved. The mashups made the college "look good" in front of a statewide audience that often has perceived Trinity as disengaged from its urban environs. But the attention simultaneously put pressure on the professor and me to make more maps. In the wake of the mashups' online publication, other local organizations were soon knocking on our doors, as were other Trinity faculty asking us if we could help them enter the map-mashup world. In other words, the mashups never were finished, even when we pretended that they were by putting them online for official consumption.

The attention also put pressure on the students and community groups to keep the original maps updated. As the world the data described changed, the maps needed to change, too. Furthermore, almost immediately, a few individuals wrote emails complaining that the mashups contained misinformation. Responding to these issues was a challenge. Although mashup technologies make updating easy, fact-checking takes time and people, both of which—at least inside the ivory tower—tend to disappear quite quickly once a semester ends and winter/summer break begins.

Finally, I personally questioned whether all five maps matched equally well the desires of the organizations with which we worked. The fact that the organizations perceived some maps as more useful than others was reflected in which maps required further refinement after the semester's conclusion. While we are still working with one organization on one map a year and a half after we started, some of the maps we never touched again. I suspect this was not because these latter maps were perfect: they were not. Instead, because the class did not perfectly read the organizations' and community's needs, these latter maps found no constituency to care about them, discover their faults, and ask for a better product

Concluding remarks
Time to take stock. I propose that there are a few things we can learn from our foray into map mashing. Mashups allowed our students to stand in a somewhat strange, but useful position relative to the local organizations they were trying to "serve" (a term I use with some trepidation). Mashups were easy: for the students to make and for the organizations to imagine and to use. In mashing, students were not so much producers as they were interpreters,

since they were not creating a product from scratch as much as they were using online, freely-available tools to provide organizations with a new perspective on what these organizations, in another form, already knew. For a small, liberal-arts college that lacks the resources larger schools often have, mashing allowed the students to do something with the community they probably could not have done any other way in the tight timeframe of an academic semester. Their newfound role as data massagers was a suitable one, given the institutional constraints. As Edward Maloney has noted, "what makes mash-ups interesting from a teaching and learning perspective is that they permit people with very little technical know-how to manage knowledge online, modeling solutions for others to see, collaborate on, and use in new ways.5

Furthermore, as boundary objects, mashups succeeded not only in mixing up online content and tools, but also people, in this case: the students, local organizations, faculty, administration, and media that participated in the project's upstream and downstream processes. In this way, mashups were a means to "open data," the idea behind the most recent IASSIST conference, where I first presented this paper. Now, as Gibson and Earle point out, mashing does not always have stunning results. As my reportage of the downstream processes makes clear, the mashing of people was not always as one might have hoped. However, this is all part of the mashing gamble: that the benefits of open data will outweigh the risks.

References
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Endnotes
1. Susan Leigh Star and James R. Griesemar, "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907 - 39," Social Studies of Science 19, no. 3 (1989): 393.
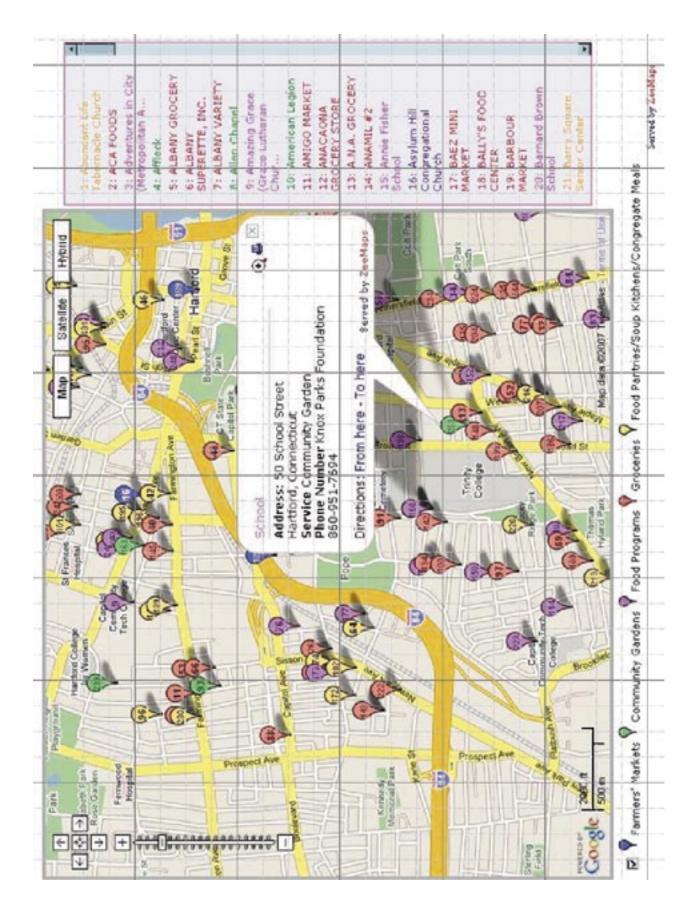
2. Howard Becker, Robert R. Faulkner, and Barbara Kirshenblatt-Gimblett, eds., Art from Start to Finish: Jazz, Painting, Writing, and Other Improvisations (Chicago, IL: University of Chicago Press, 2006), Nelly Oudshoorn and Trevor Pinch, eds., How Users Matter: The Construction of Users and Technologies (Cambridge, MA: MIT Press, 2003).
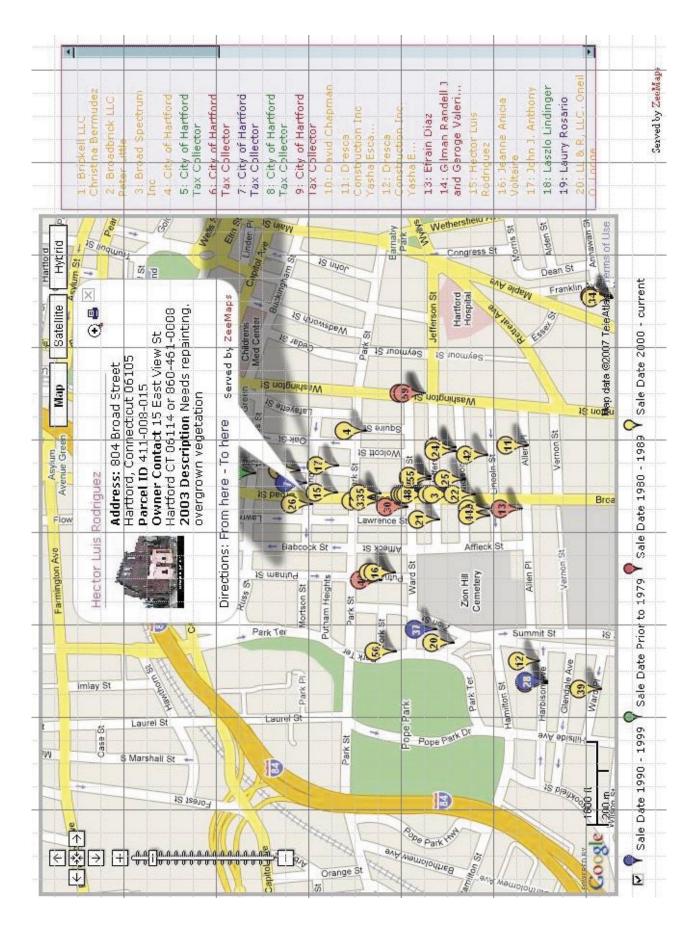
3. Rich Gibson and Schuyler Erle, Google Maps Hacks: Tips & Tools for Geographic Searching and Remixing (Cambridge, MA: O'Reilly, 2006), 67.

4. Note here there are many different kinds of mashups, not just ones involving Google maps. Mashups might not even involve maps at all!

5. Edward J. Maloney, "What Web 2.0 Can Teach Us About Learning," The Chronicle of Higher Education 53, no. 18 (2007): B26.

* Rachel E. Barlow presented this at the IASSIST 2007 conference in Montreal as "Maps that Mash: Daring, Dangerous, or Dumb?". Contact information: Rachel E. Barlow, Trinity College Library, Raether Library and Information Technology Center, Trinity College, 300 Summit Street, Hartford, CT 06106. Rachael.Barlow@trincoll.edu, +1 (860) 297 – 4114