Revision Note
This article has been revised since its original publication. A revised citation has been provided for the “Collaborators’ Bill of Rights”. The previous version of the article will remain available.

Abstract

Within the digital humanities, there are many approaches to citation. Every discipline handles citation and authorship differently, and within the digital humanities there are wide divergences of practice in the ways that credit is assigned and made visible. However, there is also broad agreement that citation practices need scrutiny and perhaps rethinking. The issue arises with particular force when we consider how to cite digital humanities projects and tools. Standard citation practices do not provide good precedents for making visible the contributions of project personnel in these highly collaborative efforts. There has been significant informal discussion and debate in recent years concerning appropriate ways to credit this work, but no consensus has been reached. FairCite (http://faircite.wordpress.com) was founded to promote this discussion and encourage it towards practical, public outcomes.

Citation is not just about information management, ensuring a reader can find a particular item at a future date. If that were the case our footnotes and references would consist solely of the numerical International Standard Book Numbers (ISBNs) attached to every book, or the Digital Object Identifiers (DOIs) and Uniform Resource Locators (URLs) of the online world. Within the ecology of scholarship, citations also provide a verifiable way to track the contributions of our colleagues and competitors through authorship in the broadest sense. In this role, citation provides a record of achievement and, in the emerging world of linked data, a view of the interconnected intellectual landscape of scholarship. However, the traditional list of authors is not an exclusive inventory of all of those people who had a hand in the creation of research outputs. No academic field currently takes a radically inclusive approach to authorship that would include everyone who had any involvement whatsoever in a project. And arguably, such an approach could prove theoretically as well as practically untenable. Once we begin exploring the relations of dependency thoroughly, we encounter a potentially limitless set of roles that may have influenced the final form of a work, such as peer reviewers, seminar colleagues, conference respondents, copyeditors, and many others. And once we extend our understanding of “authorship” in the digital humanities to include project and tool development, the set of relevant participants in the creative ecology grows even further. In designing citation systems that do justice to the record of achievement, we must ask how the threshold of citable intellectual effort and responsibility is constructed and justified.

For the digital humanities, we do not imagine that there can be a single answer to this question. Every discipline handles citation and authorship differently, and within the digital humanities there are wide divergences of practice in the ways that credit is assigned and made visible. However, there is also broad agreement that citation practices need scrutiny and perhaps rethinking. The issue arises with particular force when we consider how to cite digital humanities projects and tools, since for many alt-ac professionals, projects are a crucial professional currency just as publications are for academic faculty. However, standard citation practices do not provide good precedents for making visible the contributions of project personnel in these highly collaborative efforts. There has been significant informal discussion
and debate in recent years concerning appropriate ways to credit this work, but no consensus has been reached.

FairCite (http://faircite.wordpress.com) was founded to promote this discussion and encourage it towards practical, public outcomes. Initiated by Adam Crymble in 2011, FairCite acknowledges that scholarship is increasingly interdisciplinary and team based, and traditional models of authorship need to be redefined in light of our changing work environment. Without this redefinition, the concept of authorship itself will gradually cease to be a meaningful representation of contribution to a project. FairCite also provides a reminder that the career development of alt-ac scholars may depend on the strength of their C.V.s and portfolios. These members of our project teams can ill afford to have their contributions concealed by traditional academic practices that exclusively highlight the role of the senior scholar, or by a “no names” policy in which no one is explicitly treated as an author.[1] Because academic disciplines tend to be insular, it is easy for a scholar accustomed to solo-authored contributions to get the impression that shared authorship is the exception rather than the norm. However, other models of credit are used throughout academia to acknowledge the various contributions of collaborators with few or no detrimental effects. This article highlights some of the models currently in use, and provides practical guidance for both principal investigators and alt-ac team members looking to engage in a productive dialogue with colleagues to ensure that the needs of all parties are considered and a fairer culture of credit can begin to emerge.

FairCite does not intend to define at what level that contribution becomes “enough” to warrant authorship. FairCite neither presumes nor suggests that all members involved in a collaborative project should be considered full authors of the outputs. Neither is it about padding the C.V.s of those most in need of career advancement. Rather, it is about being informed about the needs of all members of a project team and engaging in an open and honest conversation with them to ensure that credit is shared in a way that represents the contributions of those involved. This paper was written with the example of a team of individuals involved in creating a web-based digital humanities project in mind, but it is hoped that the messages will be general enough to apply to a range of academic situations, including those resulting in a jointly-authored journal article or a monograph.

**Existing Models**

The humanities have few models for collaborative work. The single-authored paper or monograph is still expected to be the humanities scholar’s predominant output. However, there are some precedents and useful guidelines in a number of related fields including digital humanities and academic sciences. The Wikipedia article on “Academic Authorship” also offers an excellent overview of different disciplinary philosophies towards sharing credit [Wikipedia, Authorship].

**Digital Humanities**

In the majority of cases it is left up to the reader to determine how to cite an academic website or digital project. Sometimes websites will provide advice for how best to cite the work; the Old Bailey Online is a good such example, which offers suggested citations that can be used in a range of contexts depending on whether or not one seeks to cite the project itself, a document stored in the database, or even a search result. While this is incredibly useful it is by no means an industry standard to include such advice. If this information is available, it is typically found on the “About” or “Project Team” pages. At best it will provide a suggested citation, and will outline the names and contributions of all members of the team. This style of credit is not unlike what one would expect at the end of a film in which the cast and crew are listed along with their job titles or characters.

In the autumn of 2011, when the first discussions about FairCite began, they were centred on the Old Bailey Online. At the time the project’s policy was to include no one’s name in the project citation:


The principal investigators had come to this policy as a way to avoid concentrating the credit for such a large project (one that included over 40 collaborators) into the hands of a few. This was done with good intentions, but meant the names of technical team members and project managers were rarely if ever given prominence. After a series of discussions between Tim Hitchcock, one of the project’s principal investigators, and Adam Crymble[2], the Old Bailey
Online team decided to change its suggested citation to:


The resultant citation was determined by the members of the project team, rather than being imposed from outside. There was no precedent for this type of output with a suggested citation that takes authorship into account, so there was no right or wrong answer. What is most important is that the team engaged with the needs of its team members and came up with a customised solution that they believed fairly represented the intellectual contributions of everyone involved. In this case the five names represent the three academic principal investigators, the project manager, and the lead technical developer. Thirty-five other team members are represented by the “et al” at the end of the list of names, and are acknowledged more formally on the project credits page. [Emsley et al. 2013] The solution that the Old Bailey Online team came to meshes well with the Collaborator’s Bill of Rights [Clement et al. 2011], which states that “All collaborators should feel empowered to express their contributions honestly and comprehensively.” The Bill was the product of the Off the Tracks workshop held at the University of Maryland, an event that sought to promote the professionalization of the digital humanities.

Thus far, models of credit in the digital humanities have tended to follow the disciplinary standards of the department into which people are hired. There are as yet few digital humanities departments; most colleagues work in either digital humanities “centers”, cultural heritage organizations, or traditional academic departments such as history or literature. However, when disciplinary standards in the hiring department differ widely from those used by digital humanists, tensions can mount. Zotero, the citation management software developed at the Roy Rosenzweig Center for History & New Media at George Mason University, lists contributors on an About page. The project does not suggest anything resembling a citation (despite, perhaps ironically, being citation management software).[Zotero] For the project’s director, Sean Takats, the intellectual distance between his contributions to Zotero and the monographs his colleagues were used to evaluating led to conflict during his tenure and promotion evaluation, which Takats shared on his blog. One of the members of the committee questioned whether involvement with Zotero “constitutes actual research (as opposed to project management)” [Takats 2013]. Sean’s ire at having such a successful project marginalized by colleagues ill-equipped to pass judgment on something so different from the work they produce themselves is certainly valid. However, it is perhaps because projects like Zotero are so different that it is important for digital humanists to come up with models for sharing credit that elucidate the nature of everyone’s contributions in a way that is easy for outsiders to understand.

As Bethany Nowviskie’s noted in “Where credit is due”, a talk delivered at the NINES Summer Institute in May 2011, the problem of being recognized does not stop at those seeking tenure, but permeates into the much more vulnerable realm of alt-ac scholars in the digital humanities. Nowviskie worries that these scholars are put “into a position where they may choose to de-emphasize their own innovative but collaborative work because they fear it will not fit the preconceived notion of valid or significant scholarly contribution by a sole academic.” [Nowviskie 2011] The way out of this predicament may not be led by individual scholars interested in promoting their own career progression, but in a change in the system that rewards sharing of credit.

In the United Kingdom the research of scholars, departments, and whole universities is ranked and subsequent government funding to the institution is based on the results. The ranking occurs once every six years. In 2014 the exercise is known as the Research Excellence Framework (REF), and this version of the assessment emphasizes the importance of digital outputs such as databases, digital media, and software, which will be considered a form of scholarly output and will be assessed alongside journal articles and monographs. This means that in the UK at least, scholars will have a vested interest in including their names with project outputs and the “no-names” policy may disappear out of a need for career advancement and departmental ranking.

**Academic Science**

The sciences are known for multi-authored papers and provide the most comprehensive model for author attribution.
However, there is no single model and each journal may have their own guidelines. Nevertheless there are several attempts at standardization. The International Committee of Medical Journal Editors (ICMJE) supports the following standards and expects authors to meet all three conditions:

1. substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
2. drafting the article or revising it critically for important intellectual content; and
3. final approval of the version to be published.

[ICMJE 2013]

Journals under the Royal Society of Chemistry Publishing umbrella provided the following guidelines:

There is no universally agreed definition of authorship. As a minimum, authors should take responsibility for a particular section of the study. The award of authorship should balance intellectual contributions to the conception, design, analysis and writing of the study against the collection of data and other routine work. If there is no task that can reasonably be attributed to a particular individual, then that individual should not be credited with authorship. All authors must take public responsibility for the content of their paper. The multidisciplinary nature of much research can make this difficult, but this may be resolved by the disclosure of individual contributions. [RSCP 2013]

The Nature family of journals does not explicitly outline criteria for authorship, but requires all papers to detail the contribution each author made in a footnote. This policy is now mandatory for all Nature papers and is meant to eliminate the problem of “Honourary Authors” – people whose names are included on the paper despite no tangible input from that person. Nature also believes this policy ensures that the right person can be made responsible should problems with the research arise in the future. Examples of author contribution statements from Nature papers look like the following:

- S.H.C. designed and performed experiments, analysed data and wrote the paper; N.C., M.T. and J.M.G. designed and performed experiments; D.R. and M.B.G. developed analytical tools; and C.I.B. designed experiments, analysed data and wrote the paper.
- Y.O. and Y.Z. designed the experiments and prepared the manuscript. Y.O. performed the experiments. G.S., M.K.R. and Y.M. generated the chimaera mice from the BayGenomics ES clone.

[3]

Scientific papers commonly include a footnote attached to the author list, which provides details on where each person works and how they can be contacted, as in the example below from Nature. An equivalent to this footnote space could be used in digital humanities projects to outline contributions from each person. The wording could be left up to individual projects, or could be standardized with a limited set of contribution keywords (writer, designer, database, project manager, etc). Nature Editors have contributed a number of editorials discussing the issue of authorship, many of which are relevant to the current discussion; see [ICMJE 2013], [Clarke 2007], [Nature Nanotechnology 2009], [Nature Cell Biology 2009a], [Nature Cell Biology 2009b], [Nature Physics 2009], [Nature 2007], [Nature 2009a], [Nature Materials 2004], [Nature Materials 2008].
As not all people who participate in a project meet the criteria for authorship, it is common in science papers to “acknowledge” more minor contributors in the same way one acknowledges funding bodies. The ICMJE provide guidelines for acknowledgement, which are similar to their guidelines for authorship, and outlines the appropriate model for acknowledging said contributions. For example:

The authors would like to thank Ms. Anne-Marie Allen and Mr. Adam Crymble for their assistance with data collection and the Natural Sciences and Engineering Research Council for their financial support. [Kedgley et al. 2009]

Having a Discussion about Credit with Collaborators

FairCite is not an attempt to enforce a standardized system of liberal author attribution and citation. Instead, it is about promoting an open and honest conversation between collaborators. This section outlines one way in which project team members might like to initiate and conduct that discussion. This is by no means the only way to do so but may prove useful for getting the ball rolling.

Strategies for Initiating the Discussion

The biggest hurdle to overcome is to start the conversation in the first place. The sooner this conversation takes place the better. Ideally it should be part of the original project pitch in which the team is being put together and the outputs are discussed. By being open and upfront about the intended project outputs and how credit is shared there is less opportunity for resentment or awkwardness to build up that could threaten the productivity of the group as well as future relations between its members. The person in a position of power is the best placed to instigate this conversation, since more junior members may be hesitant to raise what they may think is a contentious issue. Usually this is the principal investigator or the individual who first suggested the collaboration.

However, it may not occur to that person that a conversation is needed, and so all collaborators should feel empowered to raise the issue and seek a discussion. Many people will be relieved to have the question raised and dealt with, even if they themselves were unwilling to raise it. At worst the team discovers at an early stage that they do not want to continue working together and everyone has the chance to cut their losses. At best you avoid an awkward situation and hurt feelings down the road, and everyone’s career benefits from the outputs of the project. If your project is already underway and your team has not yet had this conversation, it is not too late; but the sooner it occurs, the better. If your group has regular meetings consider raising it at the next opportunity. Alternatively you could circulate this article as an icebreaker and suggest you would like to engage in a dialogue.

What are the Right Questions to Ask?

Once you have initiated the discussion you need to know what to talk about. The exact questions you will need to answer as a group depend on the nature of your project and the roles of those individuals who are involved. The
following may prove useful as a guideline for resolving common issues.

**Does Authorship Matter to All Team Members?**

You may find that some team members are not concerned with authorship, and may not wish to be included as authors. There are a number of reasons for this; perhaps they are commercial partners who are unable to accept such credit, or they may have personal reasons for not wanting to spread their name widely. Not everyone operates in the same reward economy. Some members of the team may feel they are rewarded amply for their efforts in software development or web design and may be happy forgoing more formal recognition. On the other hand, some people will be keen to show evidence of their outputs and their career development may benefit enormously from wider exposure. Asking team members if authorship is important to them is a good starting point for any discussion.

**Authorship Order: Does it Matter?**

Keep in mind that not everyone will have the same ideas about authorship and that their concerns may be grounded in past experiences or real issues within their own field, such as promotion and tenure. The issue of authorship order is a good example of disciplinary discrepancy. In different fields the order of authors has different cultural connotations. Historians would tend to think the earlier one's name appears in a list of authors the larger the contribution that person made. This idea of “first author” also pervades in fields such as engineering; however, engineers also reserve the “last author” as the most senior place, where the principal investigator's name appears. This is based on a model in which the principal investigator crafts the idea for the project and finds the funding to carry it out, but generally a student or postdoc does the actual research or coding and writing. Other fields use an alphabetical model for listing authors names, which avoids the matter of hierarchy altogether. This may be a good solution for some groups, but one should keep in mind that a reader unaccustomed to alphabetical listings may try to interpret the level of contribution each member made based on name-order, regardless of the author's intentions.

As each discipline has different ideas on authorship order it is always helpful to ask your colleagues what if any conventions are used in their field. Try to look at the situation from everyone’s perspective individually. Find areas where there are conflicting ideas and those in which your ideas are the same. By working together you may be able to compromise on a solution that leaves everyone with a fair attribution for the work they put into the project. If the issue seems unworkable because of different disciplinary standards, consider using a footnote to outline the contributions of each member so that they are able to highlight their role for future employers. By putting this information in print, those evaluating job or grant applications have a means of independently verifying what appears on an applicant’s C.V.

**What Level of Contribution is “Enough”?**

Everyone likes to feel like their contribution was valued, and this is an area in which hurt feelings may creep in if the issue is not handled delicately. Maintain positive and open language and try to keep the discussion as relaxed as possible. It is a good idea to come into the discussion with some examples of how similar projects have attributed authorship in the past. The ICMJE criteria listed above can be a good starting point for making this decision.

Do not feel pressure to come up with a definitive answer immediately. You can hold another meeting at a later date once everyone has had a chance to digest the discussion. But once you have agreed on a way forward, it is always a good idea to write it down. This puts everyone on the same page and can be used in the future to resolve any conflicts that arise over the course of the project. Keep in mind that nothing ever goes exactly as planned and your group may have to revise the agreement slightly if certain members fail to fulfill their promises, or if new members of the team join once the project is underway.

**Conclusion**

We all need to get credit for our work, whether we’re academics, students, project managers, or database developers. However, forms of credit vary and different projects may address the challenge of appropriate forms of citation in very different ways. FairCite does not seek to impose a new or standard form of citation. Instead, FairCite seeks to assist in initiating and framing the conversations between collaborators that can lead to a shared, explicit understanding of how
credit is being assigned and publicized within a given project. FairCite also suggests that projects provide clear instructions to authors on how to cite the project in publications, rather than leaving it to individual discretion. As an appendix to this article, we offer a template with sample language for a public FairCite declaration reflecting your project's citation preferences.

Over time, we hope this initiative may lead in three complementary directions. First, as projects conduct internal conversations and develop expanded forms of citation, we would like to gather these at the ACH’s FairCite page (http://ach.org/faircite/) and use them as models for other projects to study and build upon. We encourage projects to send their models to faircite@digitalhumanities.org. Public discussion may yield insight into which models prove most transparent, equitable, and scalable. Second, we hope to see some convergence in practice concerning the location and discoverability of projects’ FairCite declarations, to make it easier for authors to locate the preferred form of citation. Finally, with more equitable and discoverable forms of citation available, we hope to see authors citing digital projects in their published work and providing visible credit to a wider range of project contributors.

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Appendix: FairCite Declaration of Authorship

We propose the language below as a model or starting point for FairCite declarations:

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The participants named below declare that we have had an open and honest discussion with all significant contributors about our respective roles in [project name]

Though our individual contributions took many forms, we agree that these contributions all constitute an authorship role in the project.

We ask that formal citations of this project use the following citation, to which we have collectively agreed and which we believe fairly represents the time, energy, and expertise of our project team members.

[Text of citation]

[Names of project participants]
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Notes

[1] For more on this see [Scheinfeldt 2010].

[2] For more on these discussions see [Crymble 2013], [McDayter 2012], [Various 2012], [Denbo 2012].


Works Cited


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