Barrington Atlas of the Greek and Roman World for iPad edited by R. J. A. Talbert

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The *Barrington Atlas of the Greek and Roman World* has been with us for nearly 15 years.[1] In this time, the *Barrington Atlas* has established itself as an integral part of the landscape of classical studies. In the same period, the publishing world has undergone a digital revolution. Princeton University Press has kept abreast of these changes and produced an electronic version of the *Atlas* for use on the iPad. The PUP blog[2] called the new offering the Barrington Atlas of the Greek and Roman World App. The PUP website[3] calls it the Barrington Atlas of the Greek and Roman World for iPad. The App Store calls it simply the Barrington Atlas of the Greek and Roman World. In this review, I refer to it as the BA App. An updated version of the BA App was issued in 2014 almost immediately after the initial launch (2013). This updated version, BA App 1.1, is the one current at the time of writing and submitting this review (May 2014); further updates will undoubtedly be released in the future. BA App 1.1 is compatible with the iPad 2 (or later) and requires iOS 7.0 (or higher). It is available for download from the App Store.[4]

The App Store emphasizes the portability of the BA App. The PUP website stresses the advantage of being able to 'carry all the content of the BA on your iPad'. It is certainly true that the weightlessness of the app contrasts favorably with the unwieldy heft of the atlas in its physical form. Putting content into app-form does more, however, than counteract gravity. Freed from the linear

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[1] Go to press.princeton.edu/titles/6773.html.
[2] Go to blog.press.princeton.edu/barrington-atlas-of-the-greek-and-roman-world-app-available-november-21-2013.
[3] Go to press.princeton.edu/apps/barrington-atlas.
[4] Go to itunes.apple.com/us/app/barrington-atlas-greek-roman/id767575157.

sequence of the book format, we enter the formless realm of the digital world and this alters the way in which we approach and interact with content. We become users rather than readers, actively charting our way through the information available rather than passively following routes dictated by others. With this in mind, I chronicle the pleasures encountered, and the challenges faced, by three different users navigating their way through the BA App.

Of the three users followed in this review, the first is using the app to search for a specific place name; the second is interested in finding a map of a specific region; and the third wants to go straight to a specific map. The speed and simplicity of their journeys through the app are such that the process of using the physical atlas suddenly seems incredibly arduous in comparison—even though it never seemed that way before the app came along. Their experiences do, however, bring up some interesting questions about the kind of creature that the app is or wants to be. Is it merely an electronic clone of the physical atlas? Or is it an adaptation that will increasingly diverge from its physical parent as future versions are rolled out? Further, our users do encounter some glitches in their travels, as detailed in what follows. Since an app is more malleable than a physical book, some of the glitches present as of May 2014 may have been fixed by the time when you read this review.

Let us look first at the user who is searching for a specific location and let us assume that he is looking for the ancient city of Ephesus. He makes use of the index—the Gazetteer, as it called in the *Atlas*, in more geographically-appropriate terminology. Using the physical atlas, he would have had to turn to the back pages where the gazetteer is printed; he would have run his eyes down the alphabetical list of locations until he found the entry for Ephesus; under the entry, he would have found three different map numbers but, because they were all on the same line alongside the name of the city, he would have realized that the same city is shown on three different maps (rather than concluding that there were three ancient cities named Ephesus). Choosing to look at the first map listed ('61'), he would have noted the coordinates given for Ephesus ('E2'). He would then have flicked back through the pages of the atlas to Map 61, run his eyes along the top scale of the map to find column E and down the side scale to find row 2; and there, as promised, he would have found the ancient city of Ephesus, located on the western coast of the Asian peninsula.

Life is so much better with the app. Our user opens the app on his iPad and taps on the homepage to reveal the lefthand menu. He then taps the fourth item down, marked with an icon of a magnifying glass and labeled 'Gazetteer'.[5] This brings up the list of place names arranged in alphabetical order, as in the physical atlas. The app-user is unlikely, however, to run through the alphabetic list. (One wonders how long it will be before knowing the order of the alphabet becomes as redundant as being able to write in cursive.) Instead, he uses the search line, that great boon of the internet age. He enters 'Ephesus', which brings up three entries, each on a separate line, each with a different map number and set of coordinates. The user taps on the first line, which acts as a hyperlink to Map 61. The map opens up in the screen; even better, the app zooms in on Ephesus so that the user does not even have to tax his brain by following the coordinates.[6]

I have a slight quibble with the layout of the app-gazetteer, with its three separate line-entries for 'Ephesus'. The user might legitimately, if erroneously, assume that each line relates to a separate city. In the physical gazetteer, where the name 'Ephesus' is given just once and the three map numbers pertaining to it are given on the same line, it is clearer that we are dealing with three entries for the same city rather than three different cities. I can see the problem for the producers of the app: each line of the app-entry also acts as a hyperlink to the relevant map; so, for three different maps, there have to be three separate lines. Perhaps a solution would be to make the map number, rather than the whole line, act as the hyperlink? Thus the name 'Ephesus' itself would appear only once (as in the physical gazetteer); the name itself would not act as a hyperlink; all three map numbers would be displayed alongside it; and each map number would act as a hyperlink to the relevant map.

Quibbles aside, our user experiences a more serious glitch when he taps on the second line-entry for Ephesus, where the map number is given as '1',

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[5] On pages other than the homepage, the label 'Gazetteer' disappears from alongside the icon in the lefthand menu, as do other labels; this hinders navigation from one app-page to another.

[6] For some place names, the zoom function is misdirected. In searching for 'Apamea' (present day Qalaat-el-Moudiq, Syria) and choosing the link to Map 68, I found that the correct map opened on the screen but that the zoom function took me too far south and deposited me in northern Lebanon.

and the coordinates as 'I3'. Map 1 is a small scale map showing the entire Mediterranean world with the major cities of antiquity, including Ephesus. However, this is not the map that appears when our user taps on the second line. Instead, he is transported to Map 1a, which shows what are today called the Canary Isles, off the coast of north western Africa. The app then zooms him in to what is now Morocco. This is all very disorienting for someone seeking Ephesus. A quick test suggests that the problem is a systemic one. Looking for the ancient city of Gaza in the present day Gaza Strip, I noted that one of the entries was for Map 1, J4. Tapping on the relevant entry, I was taken to Map 1a and then zoomed in to the Atlas mountains, where no amount of searching will find any city called Gaza.

Turning back to our user searching for Ephesus, let us look at his experience when he taps on the third line-entry in the app-gazetteer which gives the map number as '57' and the coordinates as 'F4'. Tapping on this third line-entry, our user is correctly taken to Map 57 and zoomed in to Ephesus. As it happens, Map 57—which shows the Aegean coasts of present day Turkey and Greece, as well as the islands of the Aegean Sea—is presented to the user with north to the lefthand side.[7] This is where the nimbleness of the iPad comes into its own. The user simply rotates his iPad clockwise through 90° so that north appears at the top of his screen. This is an altogether easier business than rotating Map 57 in the physical atlas, which is after all more than one and half feet from top to bottom and more than two foot wide when opened. Rotating it normally involved knocking other books, papers, and coffee cups off the table.

Given the ease with which the iPad can be rotated, one wonders about the value of the app's 'true-north' orientation feature, intended 'correctly to orient the map so that north aligns with the top of the device' (to quote from the Tutorial Overview in the Help section, the fifth item in the lefthand menu on the homepage). What does 'top' even mean in terms of the iPad? The device is designed, after all, so that it can be held either with its long sides or its short sides horizontal. To understand the term 'top', we need to make a distinction between the normal behavior of the iPad and its behavior when the BA App is being used. Normally, the contents of the screen swivel as the iPad is rotated so that what appears towards the top when the device is held

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[7] I assume throughout this review, unless stated otherwise, that the iPad is being held in the default position for the BA App with its long sides horizontal.

with long sides horizontal will swivel and continue to appear towards the top when the iPad is held with its long sides vertical. The 'top' of the screen is now along the short side rather than a long side; and the screen contents adjust to fit their newly oriented space. The viewer can then effectively freeze the screen contents in place by putting the iPad's 'side'[8] switch into the 'lock' position.

Things are a bit different when using the BA App. The user holds the iPad with the long sides horizontal. With the iPad thus oriented, the text and menu items on the homepage appear horizontal, as does the dropdown title bar for each individual map. If the iPad is rotated through 90°, the screen contents are automatically locked. (This means that the title on the homepage, for instance, will appear vertical—there is no swiveling of the screen contents to fit the newly rotated screen, even if the side switch is in the 'unlock' position.[9]) The app-makers have good reason for choosing to lock the screen in this way. Maps make up the bulk of the material in the atlas and maps are not as versatile as text when it comes to being fitted into a differently oriented space. Squishing a long thin map into a short fat space would destroy the ratio of distances within it. By locking the screen, the app-makers have found a way around this problem.

This brings us back to Map 57 and the 'true-north' orientation feature. To activate this feature, with the map open on the screen in front of him, the user taps the screen once; this brings down the title bar; at the far right of the title bar is a 'compass needle' icon; tapping on the compass needle icon brings up a 'compass face' icon in the centre of the map; tapping on this icon activates the 'true-north' orientation feature which is supposed to reorient the map so that north appears at the top (meaning towards the long side of the iPad). In the case of Map 57, however, the true-north orientation feature is truly disoriented and disorienting. The map does not reorient. Instead, the user is inexplicably zoomed in to the top left hand corner of the un-reoriented map.[10]

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[8] Something of a misnomer since, when the iPad is held with its long sides horizontal—as it is by default when viewing the BA App—the switch is not at the side but at the bottom edge.

[9] Unless the iPad is rotated though 180°, in which case the screen contents flip completely.

[10] Maps 46 and 83 are similarly jinxed.

In the case of other app-maps presented to the viewer with north to the left, the true-north orientation feature does work—but it is beset by further glitches. Take Map 4, for example.[11] Activation of the true-north feature does indeed reorient the map but the user is then involuntarily zoomed in to the top righthand corner of the reoriented map.[12] Double-tapping the screen to unzoom works but only for a second. The un-zoomed, reoriented map momentarily appears—in a half-screen version in order to maintain the ratio of distances—but almost immediately de-reorients so that we are back with north to the lefthand side. Pinching to unzoom works better—but the un-zoomed map only stays on the screen for as long as one holds one's fingers in place. To complicate matters further, some app-maps display with north to the right (rather than to the left).[13] With most of them, the true-north feature automatically zooms the user in to the bottom lefthand corner of the reoriented map.[14] This is all very bewildering. I wonder if the simplest solution would not be to scrap the true-north orientation feature entirely, as long as the app is intended solely for handheld devices like the iPad. (One can see it having greater applicability in an app designed for a laptop.)

Let's now leave our first user and his quest for Ephesus and turn instead to our second user, who wants to find a map of a specific region. To meet his needs, the BA App makes inspired use of what it calls the Locator (the third item in the lefthand menu on the homepage, marked with a pin icon). The Locator is the map which, in the physical atlas, was printed on the inside front cover; it was not, however, listed in the contents pages [ix–x], nor indeed was it given a name. Even so, it was (and is) a useful tool. It shows the area of the Greek and Roman world in outline with the grid of numbered maps superimposed. Let us assume that I had wanted to look at a map of the Crimean peninsula in the physical atlas. Opening the cover, I would have seen from the grid that the map which I needed was Map 23 and would then have flicked through the atlas to the relevant map. Useful but involving quite a lot of physical page-turning. Our app-user simply taps on 'Locator'

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[11] Go to Map 4 by choosing the second item, 'Maps', on the homepage's lefthand menu.
[12] The same glitch occurs in Maps 20–22, 26, 28, 36, 41, 50, 54, 59, 71, and 94–95.
[13] Maps 38, 40, 53, 96, 99, and 102.
[14] Except that, in the case of Map 38, the map remains un-reoriented when the true-north feature is activated; and the user is zoomed in to the top lefthand corner of the un-reoriented map.

in the lefthand menu and then taps on the grid in the region of the Crimean peninsula; Map 23 duly opens up on the screen in front of him. No page-flicking required.

In the top righthand corner of the app-locator is a 'Modern Countries' switch which, when activated, displays the boundaries and names of present day nation states as part of the outline map. In the physical atlas, this display was printed on the inside back cover; getting to it involved heaving the entire contents of the atlas, which was quite an effort and was not good for the binding. Simply activating a switch is a very neat innovation which takes full advantage of the potential of the digital world. The display of present day nation states was an under-appreciated asset in the physical atlas: like the map on the inside front cover, it was neither named nor listed on the contents pages. With the app, both these maps have been given the higher profile that they deserve.

The 'Modern Countries' option in the app-locator and the map on the inside back cover of the physical atlas are useful because they remind us that the world of the Greeks and Romans was not a different world but rather the same world with different politics. A word of warning, however. The boundaries and names displayed were true as of August 1, 1999, a time already receding into the past. Some of the information contained within the map is now out of date. For example, the map continues to show Yugoslavia as a single entity, although it has now been split into Serbia, Montenegro, and Kosovo. In Africa, the map continues to show Sudan as it was before the separation of the south. There is a note in the bottom lefthand corner of the map giving the dateline of August 1, 1999 and advising that the boundaries should not be taken as authoritative. The note, clearly legible in the physical atlas, is too small to be read on the app. Tapping and holding the locator screen causes a magnifying glass to appear, which is useful for viewing the grid of maps—otherwise somewhat crammed—but which does not make the note any easier to read.

The BA App does not claim to be more than the physical atlas transferred into app-form. It reflects the content of the atlas which, in turn, reflects circumstances and knowledge at the time when the atlas was undergoing preparation. As far as modern countries go, trying to keep abreast of every new development would be an endless task, as the current example of the Crimean peninsula shows all too well. However, the problem of changing

circumstances does raise a more general question about updating. The Ancient World Mapping Centre maintains a list of emendations to the *Atlas*.[15] Will these emendations be incorporated into the app only if and when a new edition of the physical atlas is launched? Or could they be incorporated into future versions of the app, regardless of the status of the physical atlas?

Let us turn finally to our third user, who knows the specific number of the map to which he wants to refer. He might be a longtime *Atlas* user or a novice following up a reference that he has found in an article. Let us assume that he is looking for Map 71 (showing Petra, in present day Jordan). On the app's homepage, he selects the second item in the lefthand menu, labeled 'Maps' and marked with a concertina icon. A carousel of the maps appears on the screen, starting with Map 1. There is nothing to stop our user swiping his way through the carousel until he reaches Map 71. He is, however, more likely to use the page-finder at the foot of the screen, which will enable him to fast-forward to his destination. Once he has arrived at Map 71, he taps on it to enlarge it to its full-screen version. All of this is perfectly satisfactory.

Our third user can choose to follow an alternate path. Having selected 'Maps' on the homepage, he taps on the 'index menu' icon at the top righthand corner of the map carousel screen. This brings up a list of the sections into which the atlas is divided. Our user then selects 'Part 5: Syria-Meroe' which brings up the list of relevant maps, giving for each map its scale, the name of its compiler, and the year of compilation. The latter two pieces of data are valid but the information on scale should be deleted. It is a hang-over from the physical atlas. The scale of each map is different on the iPad screen than it is on the much larger pages of the physical atlas. The app-makers have partially recognized this by deleting from the app-maps the specification of scale that appeared alongside the title of each map in the physical atlas: thus, app-Map 71 is headed merely 'Petra' (in the drop-down title bar) whereas its physical equivalent is headed 'Petra. 1:500,000.'

Scale also makes an appearance on the app-pages that list the contents of the atlas and thereby highlights an identity problem that needs to be sorted out. These app-pages are accessed by tapping on the first item in the lefthand menu, labeled 'Introduction' and marked by an icon of an open book. Using the page-finder or swiping through the pages brings the user to pages 7–9,

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[15] Go to awmc.unc.edu/wordpress/faq/barrington-atlas-update-list/.

which are almost exact duplications of the contents pages in the physical atlas.[16] All one hundred and two maps are listed—with their scale alongside their individual titles. Is the BA App simply a replica of the physical atlas? If so, the specification of scale should be left in as a true representation of the contents page of the physical atlas, although there should perhaps be a disclaimer to this effect. If, however, the BA App is an adaptation of the physical atlas, then the specification of scale should be deleted from the contents page. In that case, too, other items should be added to the listing of contents, such as the very useful Locator. This identity crisis extends even to the app's homepage. Currently, the title is displayed there as on the paper cover of the physical atlas: *Barrington Atlas of the Greek and Roman World.* Should it perhaps read *Barrington Atlas of the Greek and Roman World for iPad*?

Leaving such questions of identity aside, let us now look at the experiences our users have once they have arrived at their destinations. First and foremost, they find the same high quality cartography that justly earned the physical atlas such high accolades. The app-makers have, however, taken full advantage of the opportunities opened up by the transfer of the maps into digital form and have incorporated some useful shortcuts. Tapping on the key icon in the title bar opens the 'map key menu', providing an explanation of all the symbols, fonts, tints, and so forth, used on the map. This is a thoughtful link, which makes life a lot easier. In the physical atlas, this information was provided on the obverse of Map 1 and required quite a bit of page-flipping forward and backward. Another innovation is the compass-needle icon which, as well as activating the true-north orientation feature as discussed above, also paves the way to using the 'continuation' feature. To illustrate the continuation feature, let us assume that our second user—the one who found his way to Map 23 showing the Crimean peninsula—now wants to see the area immediately to the east. Tapping on the compass needle icon brings up links to maps of geographically contiguous areas. Our user taps on the link to Map 84 and is immediately transported to the region east of the Crimean peninsula, namely, Lake Maeotis (present day Sea of Azov).

The BA App is an invaluable tool and PUP is to be commended for taking on this ambitious project. Creating an app for any scholarly work is something of a challenge and this is particularly true in the case of an atlas with its defined spatial requirements. These dictate that every map that is presented

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[16] The contents pages are numbered ix–x in the physical atlas.

with north to the left in the physical atlas has to be presented with north to the top in the app and *vice versa*,[17] except that maps which spread over two pages in the physical atlas keep the same orientation in the app. This is all quite complicated enough, even before introducing the searchability and navigability functions which are the true genius of the BA App. It is not surprising that some of the links and some of the zoom functions display a certain waywardness. In the grand scheme of things, the glitches are minor compared to the very real benefits conferred by the transfer into app-form.

The future potential is enormous. Top of my wish-list would be the incorporation into the app-gazetteer of the information currently contained in the Map-by-Map Directory,[18] which provides the present day equivalents of the places noted in the maps, as well as much else besides. Would it not be wonderful to be able to tap on the ancient name 'Arrapha' in the app-gazetteer and find out that its present day equivalent is Kirkuk, Iraq? Or on 'Alexandria Ariorum' to find out that its present day equivalent is Herat, Afghanistan? While not (yet) incorporating the Directory in the app, PUP has nevertheless done the next best thing. They have made the Directory freely available online at press.princeton.edu/B_ATLAS/B_ATLAS.PDF.[19]

Also on my wish-list would be a fine-tuning of the search line in the app-gazetteer so that the user who enters, for example, 'Cinnamomophorus' and comes up empty-handed is prompted to try 'Kinnamomophoros', which will duly take him to Map 4 where the appropriate region is shown (in present day Somalia). Similarly, the user who is looking for the city which he knows as 'Kyrene' will draw a blank. He should be prompted to enter 'Cyrene', which will bring up several entries, including two for the city he seeks (in

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[17] Some maps that are presented with north to the right in the app should, for consistency's sake, be presented with north to the left: see page 196n13.

[18] The Directory is bound in two volumes and priced separately from the atlas: go to press.princeton.edu/titles/6773.html.

[19] This displays the Directory's contents pages, within which each entry acts as a hyperlink to the relevant PDF. I found it confusing that there was no visual indication of this fact. In response to my concerns, PUP has added a note on the first page instructing the user to click (or, in iPad terms, tap) on each entry to open the relevant PDF.

present day Libya). Such prompts would provide an ideal solution to the thorny problem of the best way to transliterate Greek and Roman names.[20]

I have found myself in writing this review constantly wanting to refer to the physical atlas in the past tense. My guess is that, in the future, the app will diverge ever more from its physical parent and that, when we talk of the *Barrington Atlas*, we will be thinking of the app rather than of the atlas in its traditional (old?) format. There are, really, no limits to what the app might do in its future manifestations. As it gets whizzier, however, it will almost certainly get more expensive. If you want to get the BA App while it is still cheap, my advice is to buy it now.

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[20] The *Atlas* editors followed an eminently reasonable policy (for which, go to Guidelines at press.princeton.edu/B_ATLAS/B_ATLAS.PDF) but the user of the app-gazetteer is still forced to some extent to second-guess the editors' decisions.