Comment on egusphere-2022-84

Andrea Villa (Referee)

Referee comment on "The perception of palaeontology in commercial off-the-shelf video games and an assessment of their potential as educational tools" by Thomas Clements et al., EGUsphere, https://doi.org/10.5194/egusphere-2022-84-RC3, 2022

This is a very interesting contribution. Detailed papers dedicated to analyse the relationships between palaeontology and videogames are still too much uncommon, in spite of the cultural importance this medium has gained in the last 50 years or so. Both the potential videogames have as an educational tool and the tropes and narrative aspects of how palaeontology and related concepts/objects are presented within them are topics definitely worth of careful investigation, and thus contributions like the one presented by the authors are very much welcome.

As a person interested in the representation of palaeontology (and natural science, in general) in videogames and other cultural media myself, I would like to present some thoughts that came to my mind while reading the manuscript. Nevertheless, I want to begin by saying that most of these are mainly discussion points maybe originating by slightly different point of views and focus rather than real criticisms of the article. As such, I leave it up to the authors to decide whether they can be worth for an improvement of the text.

1) The authors present a classification of the palaeontological videogames, but it seems to me that a clear and straightforward definition of what they consider a "palaeontological videogame" is missing but could be useful prior to list and explain how these videogames can be categorised. Indeed, it emerges from different parts within the text which games are included as "palaeo-vg" and which are not, but stating this clearly with a few sentences defining the term may be of help in avoid any ambiguity (and it could be also seen as a starting point for future developments on the topic made by either the same or other scholars).

2) The authors explicitly exclude from their classification of palaeontological videogames those games where, in their words, ancient animals and palaeontological objects are incorporated as "set dressing" or as cosmetic/aesthetic content. I would have a different point of view on this, and I would like to present it to the authors. As said before, this is mainly a discussion point, and the authors are free to ignore my suggestions here.
In spite of often not being an interactive part of the experience, environmental features of the levels/worlds in which a game takes place can be pivotal in favouring the immersion of the player. As such, these features can play an important role both in depicting palaeontological objects, concepts and extinct organisms and in accustom players to palaeontological objects/subjects as part of a real and diverse community in contrast with a narrative of unconventional and exceptional topic/individuals (thus contrasting a classic view of exceptionality that may have problematic effects on the depiction of palaeontology and palaeontologists; if not intentionally fostering it, of course).

Just to make a few examples of what I mean, considering games that are mentioned at some point within the text:

a) the museum sequence in *The Last of Us Part II* has a strong value in the narrative of the game, being functional to describe the relationship between two of the main characters and their life together previous to the events narrated in the game. The museum itself, and its content and exhibitions, is used as a tool to develop this narration, including interactions with and line of dialogs on dinosaur skeletons and movies. This is of interest when discussing videogames that have something to do with palaeontology under many levels, I think. The sequence includes themes such as representation of fossils, musealization, the relationship between palaeontological exhibitions and the public (in the dystopic context of TLou, of course), as well as the cultural references that have shaped the representation of extinct animals presented by the developers…

b) whale fossils in *Assassin’s Creed: Origins*, in spite of being completely disconnected from the plot of the game, still represent a chance to highlight Egyptian palaeontological heritage (and to create a discourse on it). Now, criticism may be moved on how the AC team developed the Discovery Tour and palaeontology definitely plays a very minor role in the specific case of this game, but still I think that features like this in a game may be of interest in a discussion of palaeontological themes in videogames.

It is true that, at least in some of the examples mentioned by the authors at p. 4, lines 126-127, palaeontological contents have a very minor “screen time” and so they may not be really useful as educational tools, in particular for streamers that are employing them for long sessions with a need for continuative presence of the main object of interest. However, I would say that it would still be worthy to mention them at least as a specific category within palaeo-vg (intended in a wide sense), in order to acknowledge their existence and to open to possible future investigations about this type of representation of palaeontology within videogames. A similar line of reasoning may apply to skins and other aesthetic-only content, as they are also representing palaeontology (either in a good or bad way) in the medium.

3) There are at least some parts of the text where the authors seem to criticize exaggerated or unrealistic content developed in the context of a fictional (comic, fantasy, sci-fi…) game under the light of inaccuracy towards the real world and subsequent misrepresentation and disinformation. Examples of this may be p. 12, lines 398-402 (“However, issues arise because other fossils items, ranging from the ridiculous (fossilised cow udders) to the bizarre (‘perfectly preserved moustaches’) are presented as genuine fossil remains. While clearly light-hearted and for comedic effect, the indiscriminate mixing of real and fake fossils is problematic and would not necessarily be discernible for all players.”) and p. 15, lines 501-502 (“It is often not made clear to players that, currently, we are not able to ‘resurrect’ extinct animals, nor can we extract viable genetic material from fossils.”). Issues like these are basically inherent when fiction is present in a media, being it a videogame, a movie or a novel. Works in genres such as sci-fi and fantasy are grounded in some discrepancies with our real world (being them the existence of some alien/fantastic organism, the availability of particular technologies, or else), and the acceptance of this (the so-called suspension of disbelief) is part of the approach the consumer has towards the work. It is not clear if these are just warnings for science communicators approaching this kind
of games (as it may be, given these are one of the main targets of the paper itself) or actual criticism towards the games. However, at least some passages seem to hint (likely unwillingly) at some sort of “responsibility” of the developers as propagators of misinformation because of not specifying the fictional nature of something featured in their game. I would suggest to maybe better clarify the target and scope of some of the criticism presented in the paper (such as the two examples mentioned above).

4) The authors correctly highlight, in various part of the manuscript, the conflict between search for accuracy and commercial/entertainment needs game developers are facing when including any kind of palaeontological content within their games (and this of course apply to any other scientific feature). Just as a thought-provoking question (and I know this is the one-million Golden Coins issue), do the authors think a mixed approach towards palaeo-themed games, balancing accuracy-directed development and other needs, is possible and viable for COTS products? Maybe this topic could be briefly explored in the conclusions...

5) While preparing this review I had the chance to read the comments already posted by the other reviewer, Dr. Flavia Strani, on the preprint web-page of this article. I agree with most of her comments and especially on the needed references she mentions, with particular respect to the palaeontoethics paper (DeMiguel et al. 2021).

In the end, some other minor changes can be found in the attached pdf.

Please also note the supplement to this comment: https://egusphere.copernicus.org/preprints/egusphere-2022-84/egusphere-2022-84-RC3-supplement.pdf