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Interactive comment on "Demonstrating change from a drop-in engagement activity through pre- and post- graffiti walls: Quantitative linguistics and thematic analysis applied to a space soundscape exhibit" *by* Martin O. Archer et al.

Anonymous Referee #2

General comments

This is a good paper that presents a useful approach to evaluating drop-in public engagement activities. The detailed statistical analysis is particularly interesting, perhaps more for its explication of a rigorous analysis of graffiti walls and word clouds than for its demonstration of the efficacy of this particular activity. The analysis is very impressive and this paper stands to be a constructive best-practice guide for other public engagement practitioners.

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[Discussion paper]

Nevertheless, I think the novelty of using before-and-after graffiti walls is perhaps over-stated. For example, I was part of an interactive drop-in exhibit in March 2018, where we asked attendees to write words / ideas related to the exhibit theme on small cards, both on entry and just prior to leaving, giving us both pre- and post- data, in the form of collections of words and phrases, in much the same way. However, I think the subsequent analysis of data performed here is what makes this work noteworthy, and, as far as I am aware, original.

The title adequately reflects the contents of the paper, and the abstract gives a neat summary too. Overall, the paper is well-structured and clear, and of an appropriate length for the material covered. The language is fluent and precise, although there are one or two points (as noted in the specific comments below) where the readability drops off a bit and it becomes confusing. Nevertheless, this paper is largely well-written, useful and enjoyable to read. It makes a worthwhile contribution to the literature of this field.

Specific comments

- Line 20: Is it worth explaining at this point, in just a few words, what a 'graffiti wall' is? It doesn't become clear until you get to the images in Figure 1 and lines 55-60.

- Lines 35-29: This is a little confusing and I think a little more care needs to be taken over the logic here. You are making two points, I think, that get conflated: (1) Space is not empty: there is lots of tenuous plasma filling it. (2) There is sound in space: there are pressure waves in plasma. I think it could be worth disentangling the two ideas a little more carefully.

- Line 67: 'The researchers would use what they had written or drawn to prompt a short dialogue about aspects of the space environment [. . .] âĂŤ a method informed by the 'science capital' research'. The relationship between science capital research and the researchers undertaking a dialogue with attendees is not immediately obvious here. It might be interesting to draw out a couple of details from the research that prompted /

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informed this aspect of the activity.

- Line 89-91. The discussion of the power law / Zipf exponent is a little confusing here. In line 89, you say the exponent is -1. However, in lines 90-91, you suggest the exponent can take different values. When is it -1 and when is it something else? Or are these two different things? Some further clarity here would be beneficial.

- Line 124-129. I'm struggling to piece this together a bit. Is the implication that the people who initially said 'empty' then went on to say something else afterwards, but they didn't say 'full'? I think you need to re-examine how you set out your findings here, because it is a bit confusing as it stands.

- Line 201-2. Why do you give 16 responses before and 15 responses after? Overall, the explanation of the contents of Table 2 is hard to follow.

Technical corrections

- Line 9: 'the power of data sonification in innately communicating science' – I'm not sure 'innately' is the right word here. I'm not quite sure what you mean.

- Line 35: 'The solar wind is highly dynamic and as it buffets against Earth's magnetic field generates plasma wave analogues to ordinary sound at ultra-low frequencies' – this is difficult to follow as it stands. Consider putting an extra 'it' in: 'as it buffets against Earth's magnetic field, it generates plasma wave analogues'