Review of: "Collective Pareidolia"

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I really like the fact that this paper is about real-world events vs. an artificial laboratory-based investigation. I also like that it focuses on a possible and serious application of pareidolia (which is otherwise often treated as a fun phenomenon). However, because of the nature of the claim presented in the paper, it has a tall mountain to climb, and I am not sure that it makes it to the summit.

Some points:

- I am not sure that the early sections of the paper benefit from some of the attempts at neuroscience (e.g., It serves the brain by rapidly identifying sensory data before the visual centre can fully process them: In the human brain, this mental priming effect of interpreting stimuli according to an expected model "lacks an error-detection governor to modulate the pattern-recognition engine"). Instead, I think that we just need to know that humans have a propensity for finding patterns in meaningless data, and that this has probably evolved because it is better to detect patterns that don't exist than to miss those that do.

- In terms of reviewing previous work, it might be helpful to mention some of the work on individual differences and pareidolia (e.g., Zhou, L.-F., & Meng, M. (2020). Do you see the "face"? Individual differences in face pareidolia. *Journal of Pacific Rim Psychology*, *14*.)

- The idea of group influence over perception of pareidolia is certainly interesting and, I think, novel. However, the paragraph introducing the idea may benefit from less neuroscience ('Moreover, the amount of information the thalamus sends to the visual centre is only about one-sixth of that travelling in the opposite direction': 'Visual memory/imagery occurs in the higher areas of the visual cortex of the inferotemporal cortex, with feedback projections back to the visual cortex (V1, V2 and V4'), and instead more psychological research into how group processes can affect perception (e.g., compliance, peer pressure, etc.).

- The paragraph starting 'The initial response of any human visual system…' appears to make the strong claim that the perception of rock art is a form of pareidolia. My guess is that this might be better presented as a hypothesis, rather than a certainty (I am assuming that some rock art was genuinely made by humans and therefore isn't a form of pareidolia).

- The description of the background to the case is clear, and this is obviously a well-known site.

- The statement 'On the second day, the specialists were taken to a valley with several sites of these petroglyphs, but despite all efforts, they could not detect any of the dozens of motifs they were shown.' needs to be supported by

evidence. Did the specialists produce a statement or report saying that this was their view? At the moment, there isn't even a reference to support this statement. This is vital to the integrity of the paper.

- Figure 2 gives an excellent illustration of the issue.

- There is a clear and helpful description of the process used to produce the rubbings. It would be helpful to know if this is a novel process or one that is widely used in this type of work. If novel, who came up with it and why has it been used here?

- The following paragraph contains a statement – 'There was no correspondence between depressions on the rock and blank areas in the pigment; the pigment had been applied independent of the surface topography'. – again, can this be evidenced? Did the specialists write a report, or can they at least produce witness statements? At the moment, we have no evidence about their thoughts and opinions.

- It is unclear, but is the author one of the specialists? Just before the Discussion, the author describes how they started to see the alleged illusory phenomena too. That is an interesting observation, and it would be good to hear more about it.

- Could the author demonstrate that the images are illusory by, for example, taking any randomly selected piece of similar rock and using the rubbing technique to produce a face? This would help to convince readers that the reported faces do not exist and that the rubbing procedure reliably produces illusory evidence.

- The discussion surrounding peer pressure, status, and the perception of rock art is fascinating. It might benefit from citing previous psychological research into these phenomena and again probably doesn't need the neuroscience (e.g., 'Initially unable to discern the pattern, the student's visual system will summon stored imagery of similar petroglyphs, flooding the lateral geniculate nucleus with them in the search for a match.')