

Black holes hypothetical language: conceptual, linguistic and algorithmic considerations

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Abstract— The purpose of this article is shading light into the potential language of a black hole, an object of astronomical inquiry interesting researchers for quite a long time. We will focus on conceptual considerations around the very idea of black hole, to then explore the linguistic aspects of these special objects of inquiry. After that, we will focus on algorithmic considerations, involving an algorithmic-like concept capable of generating scientific ideas on the hypothetical language of black holes we may end up finding. In that sense, we will see if/how these new insights will be able to contribute both to astronomy and linguistic analysis.

Index Terms— algorithm, black hole, hypothetical/potential language, prayer/"prayer" duality, scientific writing automation

1 INTRODUCTION

BLACK holes have been an enormous and ever-growing source of astronomical research for a long time. With Stephen Hawking among others, important progress has been made, and black holes have become a topic of popular interest. However, that is not the primary focus of this article.

Our purpose through this investigation is providing new insights into the potential (or hypothetical) language of a black hole. For this purpose, we will use conceptual and logical means of explanation.

2 LITERATURE REVIEW

2.1 Black hole

A black hole is defined by NASA as a place in space where gravity pulls so much that even light can not get out. The gravity is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying [1].

2.2 Language

For the time being, we will assume language is a system of communication, with mysterious properties and dynamics, which are hard to identify right now (Alvarez, 2018, 2019, 2020).

2.3 Prayer/"prayer" duality

Prayer/"prayer" duality is the linguistic-cognitive system, through which non-measurable activities like prayer, take place (Alvarez, 2019, 2020). In this case we apply this definition to the potential communication of black holes.

2.4 Scientific writing automation

Scientific writing automation is a system of automatic process/product of writing in the field of science, in other words, falling into the category of what the word "science" means (Alley, 2013; Alvarez, 2019; Brown, 2012; Chikuni & Khan, 2008; D'Alleva, 2005; MacArthur *et. al.*, 2008; Peat *et. al.*, 2013; Wingersky *et. al.*, 2008). In the case of this article it will work as an algorithm for writing.

3 DISCUSSION

3.1 Conceptual considerations

The idea in this section is discussing what a black hole is in terms of conceptual considerations through an unorthodox and speculative method. This method is mainly based on the concept of prayer/"prayer" duality (Alvarez 2018, 2019, 2020), which looks at different types of phenomena with a linguistic and cognitive eye, trying to go beyond that when possible.

If black holes are what we think they are, then this is the start point of our discussion. For the time being, we will focus on the concept itself. Why are we doing this? Simply to make the concept of black hole work within a sentence, to perform a mental experiment with it.

Black holes pray unconsciously

, meaning black holes may have "cognitive" processes connected to far away space, metaphysically speaking. The activity of "prayer" in this case by a black hole, may happen without a black hole having a consciousness, in the sense in which we understand consciousness.

If a black hole is able to "pray", we may speculate on the nature and astronomical effect of this activity. We may try to understand what happens within a black hole when this activity takes place, physically speaking.

Of course, whatever we come up with in relation to

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the prayer of a black hole, has a speculative nature. Therefore, it is not empirical proof of future research in relation to this. However, since the nature and procedures of these speculations are insightful, they may be the basis for future research in regard to this.

Maybe what happens within a black hole when it is praying, at the physical level, has to do with the interaction between its physical and metaphysical nature, and its interaction with the receptor of that prayer.

Maybe it is not only that. Given the conceptual process of praying unconsciously yields insightful information in relation with human cognition and language (Alvarez, 2018, 2019, 2020), it may be the case our cognitive system, which may include the brain, has subsystems equal or almost equal to "black holes".

3.2 Linguistic aspects of black holes

Assuming our cognitive system has a subsystem equal or almost equal to a black hole, we may assume this subsystem is related to language somehow. If that is true, it may happen because it reflects the dynamics of a black hole in outer space.

If our cognitive system has something equal or almost equal to a black hole within, this cognitive black hole may have some linguistic dynamics going on within itself. The potential linguistic aspects of a cognitive black hole are an interesting issue for sure but the focus of the research at hand is another one. In this case we want to focus on the potential language of a black hole in outer space.

Now it is time to work on a sample similar to previous one but in this case, we will focus on the potential language of a black hole. It will work together with the concept of "praying unconsciously". The sentence we need is:

The potential language of black holes prays unconsciously

, meaning there is no certainty as to whether there is an actual language through which a black hole communicates. However, as there is something praying unconsciously, the language of a black hole is "real" in conceptual terms, or potential terms.

Previous point suggests the following: black holes have a potential or hypothetical language through which they communicate with other objects in outer space. However, as we mention, there is no hint a black hole has consciousness or something remotely similar.

Furthermore, as the language of a black hole is potential, we can approach this scientific problem from a hypothetical point of view, meaning the potential language of a black hole exists within the realm of potential reality, if such a thing exists or can be named that way.

Assuming previous point is true, we can start working on the basic ideas of what the language of a black hole might look like. Next section will develop that idea through an algorithm.

3.3 Scientific writing automation applied to the potential language of black holes

If we apply an algorithm of a special kind to the discussion, we can think of SWA, that is Scientific Writing Automation (Alley, 2013; Alvarez, 2019; Brown, 2012; Chikuni & Khan, 2008; D'Alleva, 2005; MacArthur *et. al.*, 2008; Peat *et. al.*, 2013; Wingersky *et. al.*, 2008). Even before explaining in general terms, how this algorithm will generate ideas in relation to the potential language of black holes, we need to mention the algorithm already works in the writing momentum of this section, which produces interesting phenomena in the realm of writing and reading (Alley, 2013; Alvarez, 2019; Brown, 2012; Chikuni & Khan, 2008; D'Alleva, 2005; MacArthur *et. al.*, 2008; Peat *et. al.*, 2013; Wingersky *et. al.*, 2008).

However, the point in the section of this article, is to provide insights into the potential (or hypothetical) language of a black hole, as we mentioned. To do this, we need to focus on SWA and let it work to see what ideas in relation to this topic it is able to generate.

First, an algorithm of this nature will suggest a potential algorithm generating the language of a black hole. How does this linguistic algorithm work? We will try to answer that question in the following paragraphs.

Maybe the algorithm we try to decipher in this case, can produce the "cognition" of a black hole, connected to its linguistic ability. If a black hole is able to "pray unconsciously", this algorithm may be producing that ability. However, this would not happen in a rationalistic sense, if we compare it to some lines of research emphasizing rationalism in human language, for example Chomskian language analysis.

In a way, what we focus on here may mix up with a potential "algorithm" to produce human language in the line of prayer/"prayer" duality. However, once this has been mentioned, we have to go back to the focus of a black hole and how its potential language may be produced by an algorithm, the way we are explaining.

Maybe the algorithm we try to find within a black hole, works within a special kind of prayer/"prayer" duality within the black hole. This duality, which in this case may be a mechanism rather than an algorithm, may hold the special dynamics allowing a black hole to "pray" in a sense but not only that. Given what we have discussed, there is still room to think there may be non-spiritual communication in a black hole, whether this happens within itself, with other black holes, or other objects or areas in outer space.

However, although what we look for may be a mechanism rather than an algorithm, it is still possible this mechanism within the black hole has an algorithm. Assuming this is true, we will try developing this idea in the next paragraphs.

It is likely an algorithm like this one is better understood within the framework of algebraic language. For example:

[LA]_{BH}

, where LA stands for linguistic algorithm and BH stands for black hole. At this point of the discussion, we can apply algorithm SWA again, in this case to algorithm $[LA]_{BH}$. We will do this in the following section, to get deeper insights of this linguistic algorithm within a black hole.

3.3.1 Scientific writing automation applied to $[LA]_{BH}$

Now that we have found an algebraic representation to work on, in this case of the linguistic algorithm within a black hole, we can apply the algorithm SWA to it, to see what ideas and insights the former can generate about the latter.

However, before continuing, we must take into account this algorithm is located within prayer/"prayer" duality within the black hole. In that case, before working on $[LA]_{BH}$ itself, we should at least represent this special kind of duality in algebraic terms first, and from then on seeing what happens. For example:

$d_p/"p"$

It is important to remember even when we seem to be outside the scope of SWA, we are still part of it, since this algorithm is able to generate information "out of the box".

So far we have focused on linguistic representations of algorithm $[LA]_{BH}$. However, we have not focused on the internal mechanism of the algorithm itself because algorithm SWA has not allowed for it yet. It seems now we can do it. For this, we will propose a model, and for now, we will assume it is true, given there are no alternative ideas so far.

We propose a special kind of prayer/"prayer" duality ($d_p/"p"$) within a black hole, generates algorithm $[LA]_{BH}$, which in turn produces the linguistic expressions a black hole may generate.

The grammar of $[LA]_{BH}$ may be an interesting topic to research. However, given the early stage of this line, we cannot provide a statement on that matter.

4 CONCLUSION

In this article we explored the potential language of a black hole. We did that by means of conceptual and linguistic considerations, and the application of an algorithm to generate information about the potential language of a black hole. At the end we could propose an idea in which the prayer/"prayer" duality of a black hole and the linguistic algorithm of a black hole, are involved. The grammar of the linguistic algorithm mentioned is still open for future research.

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