SYMBOLIC PLACEHOLDERS FOR NON-SPATIAL INFORMATION: HOPE FOR SOLVING THE MIND-BODY PROBLEM

Lilia Qian

I. Introduction

In his paper "Can We Solve the Mind-Body Problem?", Colin McGinn answers the question posed in the title with a firm "no"—human beings cannot produce a theory which explains how physical activity in the brain can give rise to consciousness. His physicalist argument is compelling, making use of the undeniable truth that human beings' cognitive abilities restrict them to grasping only spatial things and thus preclude the grasp of non-spatial properties like that which causes consciousness. In McGinn's terms, humans are *cognitively closed* to the "property instantiated by the brain in virtue of which consciousness arises." (Let us call this property P, as in McGinn's paper.) I affirm this point on cognitive closure but will here argue that cognitive closure to P does not necessarily prevent construction of a scientifically respectable theory relating brain to mind.

II. Reproduction of McGinn's argument

McGinn's argument is briefly reproduced as follows:

1. Physical brain events cause consciousness, and their relationship can be explained using science.
2. "There exists some property P, instantiated by the brain, in virtue of which the brain is the basis of consciousness" (353).
3. Humans can never grasp P; they are cognitively closed to it.
    a. Introspection fails to grasp P.
    b. Physical observation fails to grasp P.
    c. No form of inference from physical observation can lead us to grasping P. Inference requires data of the same kind as the phenomenon being explained. Consciousness is non-spatial. Humans cannot access non-spatial data. Thus, we cannot discover P by inference.
4. If humans can never grasp P, then they can never know T, a theory that explains how consciousness arises from brain matter.
5. Humans cannot know T.

III. A problem for McGinn's argument

I will, as McGinn does in premises 1-2, assume a physicalist view. I will also agree with McGinn's point in 3c that humans' perceptual capacities are limited to the spatial, which prevents them from truly grasping non-spatial phenomena. Indeed, humans cannot grasp P. However, I aim to put pressure on premise 4, which states that if P cannot be grasped, then T cannot be known. I contend that humans' inability to grasp non-spatial phenomena is not problematic for developing a theory to explain relationships between spatial and non-spatial, such as the relation of brain to mind.

The crux of my argument is this: while humans cannot conceive the *true nature* of certain non-spatial elements of reality, we can conceive of the *existence* of these non-spatial ideas and use symbols as placeholders to represent these ideas which exist but are beyond access. Symbolic representations of non-spatial things are sufficient to theorize causal relationships so long as humans understand how to maneuver these symbols in relation with other things.

Many scientifically reputable theories on physical phenomena use symbolic placeholders to express non-spatial entities that do not exist in the spatially knowable world. For example, the widely accepted Schrodinger Equation relates the physical properties of a particle to the probability that it will behave in a certain way via a simple mathematical transformation of a probability amplitude, which is an idea expressed as a complex number. A complex number is an example of a symbolic placeholder for non-spatial information, being that our concept of $\sqrt{-1}$ (the simplest complex number *i*) does not directly characterize the physical world, while still having a definable relationship to spatially-defined reality (squaring it produces a more familiar concept: -1). Contrast the unreal-ness of *i* with our idea of the number "1"—an idea so fundamental to the physical world that most babies can grasp it.

In the Schrodinger Equation, *i* serves as a symbolic placeholder for some non-spatial property we cannot perceive by our senses or fully grasp, but which nonetheless has bearing on physical reality. Furthermore, *i* is instrumental to the formation of an explanatory bridge between a physical occurrence (particle behavior) and a non-spatial property of that occurrence (probabilities).

Clearly, there is no pressing need to have a genuine grasp of a non-spatial concept in order to use it in establishing a causal relationship, so long as we can find some way to represent our symbols that carry parcels of non-spatial meaning in ways that we can manipulate spatially. To illustrate this, I return to the idea of complex numbers: we construe the complex number planes not via any real understanding, but by stretching our idea of them

onto a Cartesian plane. In other words, we artificially construct a spatial representation of non-spatial information simply for the purposes of using that information in tandem with what is spatially real to us.

I propose that we can treat P similarly. P is a non-spatial property whose true nature we cannot imagine, but we can conceivably construct some tools with which to represent it using spatially defined terms. That representation, and its relationships to spatial reality, could serve as an explanatory bridge between spatial and non-spatial. While this possibility does not offer evidence that humans will discover a solution (T) to the mind-body problem, it is sufficient to refute McGinn's reasoning that being unable to grasp P makes it *impossible* for T to exist.

IV. Anticipated Objections

The objection which most readily comes to mind is this: there is some sense in which the non-spatial nature of consciousness is fundamentally different from the non-spatial nature of some mathematical concepts like *i*. Furthermore, humans are equipped with some sensibility that allows us to understand mathematical concepts like *i*, but no such facility for P.

I am sympathetic to this view, but find no evidence to suggest that we apprehend *i* any more effectively than we could P. What mathematicians claim to grasp about *i* is really only in virtue of the tools we have used to confine and describe it in spatial terms. As I have mentioned, our visualization of the complex number plane simply removes *i* from its own sphere and confines it to a Cartesian coordinate system. Moreover, our algebraic construction of *i*, $\sqrt{-1}$, is mere stipulation, used such that we can algebraically maneuver *i* in the same expressions as we might maneuver 1, 2, or 3.

A second objection: simply skirting the need to grasp P to find T is not *satisfactory*; we have still failed to scratch the philosophical itch of wanting to have a true understanding of the mind-body relationship.

Indeed, we must itch on. But I will argue that many projects of modern science have also given up on providing the layman with some digestible causal intuition; it is satisfactory in such realms to form a *predictively valid* relationship. The construction of such a relationship for the mind and body, whether or not we have any intuitive grasp of how and why it works, will be an impressive and practically useful achievement.

There is hope: our ability to bridge the gap between brains and consciousness may not have perished with our lack of facility with which to grasp that ever-elusive P.

Works Cited

McGinn, Colin. “Can We Solve the Mind-Body Problem?” *Mind*, vol. 98, no. 391, July 1989, pp. 349–66.