6. 'The real existence of a physical object, as opposed to existence as a hallucination or in a dream, involves being in a spatial relation to HERE.' – Comment on this argument, derived from Kant, for the claim that there cannot be more than one space.

The above statement, derived from Kant, precisely identifies what reality may be, in that our lived experience depends on our ability to sense objects. We can frame the world in space and time, grasp extension; and know that when a car drives away from us it doesn't really get smaller, due to our ability to understand perspective. The distinction from a dream or hallucination expresses a critical element to our knowledge of a real existence.

Kant is able to tell me that I am seeing things as real objects and that I exist in relation to them. I cannot know them as things in themselves, but I am not imagining them either. Kant's view transcends the Berkeleian proposition that objects are solely mind-dependent and exist only there, while overcoming the problem of consciousness that a purely materialist view of the world (matter in motion through abstract space governed by mechanical laws) struggles to explain. Thus, Kant's 'transcendental idealism' attempts to compromise the materialism of Newton and the idealism of Berkeley – a stated intention of Kant's. By examining Kant's justifications for space and time being constructs from our mind, we can then show how this leads to a one space solution in our understanding of the universe.

Kant is an idealist in that he argues that space is not a property of things that exist independently of our minds. Kant justifies this in terms of synthetic a priori knowledge. All knowledge may be classified as empirical or a priori. Empirical knowledge comes from our senses: there is a tree outside the house because I can see it there – it is testable. A priori knowledge is something I know without use of the senses: bachelors are male, 7 + 5 = 12 – it is definitional. A priori knowledge is necessary and universal. Knowledge can also be synthetic or analytic. Analytic knowledge is true by definition: all bachelors are unmarried. All analytic knowledge is a priori. Synthetic truths, on the other hand, are not true by definition; they extend our knowledge beyond the subject, for example: all swans are white. Synthetic knowledge is therefore empirical. These two sets of categories appear mutually exclusive, as purported by David Hume, whereas Kant thought it possible to have synthetic a priori knowledge.

Kant uses geometry to justify this synthetic a priori position. The fact that a triangle has three sides on a plane is analytic a priori knowledge – it does not come from our senses and it is definitional, but Kant goes on to suggest that saying the sum of the angles equals 180 degrees adds to the concept of triangle so that is synthetic knowledge. Examples from Maths and geometry sustain such knowledge to be synthetic a priori knowledge. Since geometry is a study of space, then it seems to follow that our knowledge of space is synthetic a priori knowledge. Space and time

grow with our experience of the world but are not part of the world. Our knowledge of space is not empirical but structured from our mind. The radical shift here is that objects do not conform to the mind but that the mind conforms objects. They are made real to us spatially. We still cannot know there are real physical objects out there and know them in themselves: the noumenal realm cannot be grasped, but we can see the phenomenal realm. Our built-in sense of space is the only way we can interpret this objective world.

The spatio-temporal way of mapping the world is further justified by the way our minds do not have a concept of non-space. Nothing cannot even be imagined. Every thing is dependent on space. That there is only one space has to be true by definition as everything must be contained in it. If there were another space, where could that possibly be? since space is what constructs what is there for us. It cannot construct somewhere else as well. Wherever somewhere is, it must be in the same space as ours for us to know it is there.

My ‘now’ is the only objective place to be, so that if I were to be transported to a different time and place, my past would be non-existent. Knowledge of my self is a connection of my past experiences with the present – this is the only place I can be. A random world of chaotic events, without reference to time or place, denies my existence. Self-identity pre-supposes objective experience in a single world.

Space/time, as something that pre-supposes thought and is pre-supposed from experience, must then be infinite in itself, as an intuition, and infinite also in extension and divisibility. However, an infinite universe would mean that our world is replicated out there somewhere, whereas Kant tells us that we are spatially situated in one place and time. Although there is a lack of clarity interpreting Kant’s position as regards infinity, further entangled by apparent inconsistencies; it may help to view space and time as infinite in the mathematical realm, as it is held by us a priori, but that we are limited in the spatio-temporal way things appear to us.

We cannot escape from space and time because it is all we have. It is our mental instrument for knowing the world and that instrument is critical in itself. A dilemma begins to form here, in that our framework of space and time is limiting, we are not able to ‘see’ beyond pointing to a finite grasp of the physical universe through experience. Kant was aware of this problem and his compromise was to suggest that perceived reality and the physical universe do not exist, and so it is neither finite nor infinite. We need infinite time and space in our framework to make sense of everything but that everything cannot be known as real.

Einstein and modern cosmology butt right up to Kant by telling us that space is finite and geometry is part of physics – which has to be empirical and not synthetic a priori. It is the strength of the scientific position that holds one back from accepting Kant’s claim of one space in full. It is telling that Einstein is a more notoriously,

credible figure than Kant in the mainstream world, where people have to get on with their everyday lives and have no time to dwell upon the ‘mysteries’ of the unobtainable.

I am drawn to Kant’s attempt to root my thinking in intuition and find his ‘one space’ conclusion convincing and appealing. Even though I am always at the mercy of empirical science, I cannot reject Kant’s thinking because of the difficulties in reading him, and it might help that we view science as a separate project from Kant’s. A critique of pure reason is delving into what *is* this thing we have, rather than looking for what it is telling us.

The following quote wonderfully circumscribes Kant’s notions of infinitude and opens up for me the value of his attitude as both a beginning and end.

Two things fill the mind with ever new and increasing admiration and awe, the more often and the more steadily they are reflected upon: the starry heaven above me and the moral l am within me . . . The first begins at the place which I occupy in the external world of sense, and broadens the connection in which I stand into the unsurveyable magnitude of worlds beyond worlds and systems of systems, and moreover into the limitless times of their periodic motion, its beginning and continuation. The second begins at my invisible self, my personality, and depicts me in a world which has true infinity . . . .