

## Spatiotemporal Analogies: Are Space and Time Similar?

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From the mid-nineteen fifties to the early nineteen eighties, a number of eminent philosophers became embroiled in a rather odd philosophical dispute concerning the similarity of spatial and temporal concepts. The instigator of this impromptu philosophical dispute, Richard Taylor, attempted to demonstrate that space and time are, contrary to popular opinion, identical in almost every respect. One of the most controversial components of Taylor's analysis was his rejection of the common-sense belief that a body cannot occupy two places at the same time, whereas it can easily occupy the same place at two times. Taylor developed a number of intriguing thought-experiments to demonstrate this point (i.e., the simultaneous occupation of two separate places by a single body), thus bringing the spatial parts of a physical body into an analogous relationship with its temporal portions: "A ball, for instance, occupies two places at once, if the places be chosen as those [of the ball's] opposite sides; . . . It is tempting to say that only *part* of the ball is in either place; but then, it is a different *temporal* part of an object which, at the same place, is in either of two times."<sup>i</sup>

Overall, while several philosophers joined Taylor in his defense of the similarity of space and time, most notably, G. Schlesinger, many others strived to undermine Taylor's project by procuring a counter-example that would reveal a fundamental disanalogy in the assignment of spatial and temporal properties to physical bodies; e.g., J. Jarvis Thomson, J. W. Meiland, and J. M. Shorter.<sup>ii</sup> The debate eventually ran its course, however, finally fading out of the main philosophical journals by the early eighties. By this time, the focus of attention had turned to a variety of different topics involving both temporal and spatial parts, especially regarding the classification of material bodies as events, objects, and the proper role of temporal parts.<sup>iii</sup> An issue that was largely

overlooked throughout the course of these discussions, ironically, was the status of Taylor's original claim concerning the simultaneous occupation of separated places by a single body. Although it helped to bring the entire issue to the attention of the philosophical community, there was no completely satisfactory investigation of this key component in the case for the similarity of space and time. As will be demonstrated, a number of very compelling arguments that have been put forward against the spatiotemporal similarities espoused by Taylor and company. Yet, these investigations ultimately fail to address the basic conceptual issues involved in the analogies, and thus fail to clearly and unambiguously point out a fundamental difference in the concepts of space and time. In this article, consequently, we will return to the central arguments put forward for the similarity of space and time. By focusing on the most basic and central analogies employed by these "spatiotemporal analogists" (for lack of a better term), it will be demonstrated that there exists a very real difference between spatial and temporal concepts.

The outline of this investigation is as follows: after presenting the hypotheses of the principle spatiotemporal analogist, Richard Taylor, section I will conclude with an examination of a largely ineffective criticism raised against such spatiotemporal analogies by J. M. Shorter. In contrast, section II will develop a critique of the spatiotemporal analogies that, through an exhaustive analysis of their fundamental structure, endeavors to avoid the pitfalls of all previous critical attempts.

## I.

Taylor begins his analysis of spatial and temporal analogies by carefully explaining the dual role of such terms as "place", "distance", and "part". Occupying a place, for instance, need not necessarily refer to a body's spatial location, for it can also signify a given temporal location. A person can occupy a spatial place by standing at a bus stop, but she occupies a temporal place, in an equivalent manner, by standing at the

bus stop at a certain time. Another term that equally applies to both space and time is “interval”, or “distance”. As Taylor explains, “New York and Boston are spatially distant from each other, Plato and Kant are temporally so, because one can speak intelligibly of a long interval of time between these two” (1983, 64). Likewise, an object can possess temporal parts as well as spatial parts: a brick wall, to use Taylor’s example (64), has spatial parts that closely resemble one another, but its temporal parts bear an analogous similarity (i.e., the wall is nearly identical at different times).

Having established his basic terminology, Taylor next turns to the issue that, in hind-sight, constitutes his principle contention for the similarity of spatial and temporal concepts; namely, the commonly-held belief that (1) an object can occupy the same spatial place at two different times, but (2) that it cannot occupy two different spatial places at the same time. For example, an object, such as a pen, can easily occupy the same spatial place (place 1) at two different times (time 1 and time 2): by just lying on a desk over a certain temporal interval, the pen occupies several temporal places (times) at the same spatial place. Unfortunately, it is not easy to conceive how an object can occupy two different spatial places (place 1 and place 2) at a single time (time 1). Taylor, nevertheless, believes such instances can be provided. In a long passage that nicely summarizes his views, Taylor lays out his case for the similarity of spatial and temporal parts:

What must first be noted, however, is that an object is ordinarily said to be in one place at two times only if it also occupies all the time in between, whether at the same place or another, and it must accordingly have some temporal length. Otherwise, we find that we are talking about two objects and not one. But with a similar proviso, an object surely can be in two places at one time—by occupying the space between them as well. Someone who is standing with one foot in the doorway and the other outside is occupying two places at once, for instance. Of course it is tempting here to object that only a part of the person is in either place; he is not both entirely inside and entirely outside. But when this has been said, it must be remembered that it is a different temporal part of the object that, at a given place, occupies each of two or more times. Thus a person might just stay where he is for a while, and be in the same place at two different times—but it is not the same temporal part of the person that is at those times. (1983, 65)

Much of the remainder of Taylor's analysis of spatiotemporal parts is devoted to defending his theory (as developed in the paragraph quoted above) from a host of possible objections and counter-examples. For instance, one might reply that an object that satisfies case (1) above can easily move around in space, whereas an object that satisfies case (2) cannot move around time in an analogous manner. Returning to our previous example, the pen situated on the desk occupies the same place, place 1, at two different times, times 1 and 2, but it can be moved to different spatial locations within that temporal period spanned by times 1 and 2. It does not seem possible, however, for an object that occupies two places, place 1 and 2, at a single time, time 1, to move around in time within the spatial distance that spans places 1 and 2. If space and time are as similar as Taylor suggests, then there should exist instances of this latter scenario, which we have dubbed case (2). Yet, how can the middle portion of a human body, to use Taylor's own example, move to different times while one foot occupies place 1 and the other foot occupies place 2? To meet this challenge, Taylor procures a variety of unusual "objects", such as earthquakes and soundwaves, that ostensibly satisfy case (2): "Suppose that at time 1 [the earthquake] occurs (simultaneously) in two nearby towns, which we may refer to as place 1 and place 2, and that it occurs everywhere between these two towns, but at one of those intermediate places at a time other than time 1." (1983, 69)

Needless to say, much of the controversy surrounding Taylor's (or Schlesinger's) analogies would appear to center upon the ontological status, and thus admissibility, of these peculiar objects. One may contend, for instance, that an earthquake fails to qualify as a genuine material object; or, alternatively, that the division of a single object into distinct spatial places runs afoul of our normal, common-sense conception of spatial place: e.g., the assignment of separate places for each foot of a human body violates common notions of bodily place. A body occupies one place, it will be argued (rather plausibly), not two. These forms of criticism merit attention, of course, but they fail to address the central claim of the spatiotemporal analogists. For both Taylor and

Schlesinger, the success of their projects rests on the analogous interpretations of cases (1) and (2): if these apparently divergent scenarios can be brought into a close philosophical correspondence or equivalence (by merely substituting the terms “space” and “time” in the respective definitions), then many of the quibbles over the assignment of spatial places, or the status of strange “objects” (such as earthquakes), are rendered ineffective. Moreover, there appears to be no logical or conceptual inconsistency in positing multiple places to a single object, nor is it inconceivable to designate earthquakes or soundwaves as “objects”.<sup>iv</sup> As long as the debate stays in these waters, and far from the actual equivalence of cases (1) and (2), it would seem that Taylor and Schlesinger have the philosophical upper hand.

To demonstrate the inadequacy of the prevailing methods of critiquing the spatiotemporal analogist’s thesis, it would be beneficial to briefly examine an argument advanced by one of Schlesinger’s most insightful critics, J. M. Shorter. In the portion of Shorter’s article devoted to cases (1) and (2), he eventually concludes that there exists an asymmetry in the analogies with respect to the following two claims:

B. The totality of spatial parts is without remainder in each of two separated periods [of time] in one region [of space; and where “totality of spatial parts” designates the parts of a body at a single time; such as all of the parts of the pen at time 1].

C. The totality of temporal parts is without remainder in each of two separated regions [of space] throughout one period [of time; and where “totality of temporal parts” designates all of the temporal parts that comprise the object; such as all of the times at which the pen exists] (1981, 69)

While case B is clearly possible, Shorter reasons that, “for C to be true, an object would have to be without remainder in each of two separated regions [of space] throughout its existence, which is impossible” (69). On this basis, he rejects the spatiotemporal analogies, proclaiming that “there is here a difference between space and time.” (70)

Has Shorter unearthed an irrefutable distinction between the concepts space and time? Unfortunately, once Taylor’s panoply of peculiar material “objects” is taken into consideration, it seems quite easy to procure examples that satisfy case C, thereby overthrowing Shorter’s argument. Besides Taylor’s earthquake, there are numerous less

extravagant instances of “objects” (or things, events, processes, etc.) whose “totality of temporal parts” can exist without remainder at two or more separated spatial regions: e.g., families, countries, schools, etc. Many countries, such as Japan or New Zealand, have several main parts that are spatially separated, usually by large bodies of water. These countries thus possess parts at separated regions, yet it is nonetheless true that the totality of the temporal parts of the whole “object” (i.e., Japan, New Zealand) is without remainder in each of these separated parts. In other words, each spatial part contains the complete set of temporal parts, and not a greater or lesser set of temporal parts (if that is how Shorter interprets the phrase “without remainder”). Consequently, Shorter’s contention that B and C mark a distinction between space and time appears to be premature—unless, of course, he challenges the ontological status of these “objects”. Yet, as mentioned above, trying to limit the debate to so-called ordinary or commonplace objects, like books or trees, shifts the controversy away from the specific spatiotemporal analogies under consideration to a very different, and difficult, host of metaphysical issues. Shorter may be able to accomplish this daunting task, but it does seem a rather unfruitful and roundabout method of undermining Taylor’s and Schlesinger’s analogies (and may be impossible).

## II.

One of central themes to emerge in the critical investigation of Taylor’s and Schlesinger’s hypotheses is the allegation that their analogies tacitly presuppose a curiously restricted account of spatial magnitude. Instead of the analogist’s simple classification of bodily “part” into one of two camps, i.e., the spatial and the temporal, the critics claim that a further category of spatial magnitude is needed to fully capture the spatial component of material bodies (e.g., Shorter, 70; Meiland, 69). Specifically, the analogists have put forward two categories of spatiotemporal part: (SP1) the spatial parts that comprise an object at one moment of time (temporal place); and (TP1) the temporal

parts that comprise an object's entire history, but may include more than one spatial place. In the analogies offered to support (SP1), such as a person standing in a door way, a brick wall, etc., the spatial parts occupy only one temporal place. In the analogies that form instances of (TP1), on the other hand, the object need not occupy only one spatial place: e.g., a person has temporal parts that cover many different spatial places (as does our pen, since it can be moved to many different locations, although the brick wall cannot). Consequently, the basic character of the spatial and temporal parts employed by the analogists would appear to be fundamentally different, or asymmetric—and this essential difference may indicate the need for supplementary spatial or temporal concepts, or parts, to bring the analogies into a truly symmetrical relationship.

The true spatial correlate of (TP1), in fact, should not be confined to one temporal position; rather, it should encompass all of the temporal places associated with the life span of the body. Just as (TP1) is not defined at one spatial place, but includes all of the spatial places occupied throughout the body's history, the spatial analog of (TP1) should incorporate all of the temporal places (times) occupied by the body throughout its existence. This spatial analog of (TP1) would not necessarily be restricted to a single temporal place, therefore, unless the object only occupied a single temporal place (i.e., it existed for only an instant of time). Two questions can be raised in the light of this discussion: "Do material objects admit a spatial property of this sort?", and if so, "Why have the spatiotemporal analogists hitherto failed to acknowledge its role in the analogies?" While the latter question would be difficult to hazard a response, there does exist a natural correlate to (TP1), which we can label (SP2): it is simply all of the spatial "places" occupied by a single object throughout its history, and thus coincides with all of the temporal places of (TP1). The "spatial places" occupied by a body throughout its life span, (SP2), should be sharply contrasted with the "spatial places" that form (SP1). Whereas the (SP1) parts are located at a single time, or temporal part, the spatial places that comprise (SP2) cover the many different spatial places that the body *as a whole*

occupies throughout its history: e.g., our person at one moment in time has spatial parts (SP1), such as her left foot, right foot, etc.; but she also occupies many different spatial locations throughout her lifetime, such as the doorway, living room, porch, etc.

Accordingly, each individual (SP2) spatial part contains a complete set of (SP1) spatial parts, since each (SP2) part coincides with one (TP1) temporal part. To summarize: the spatiotemporal analogists have mistakenly singled out the wrong set of spatial parts as the true analog of (TP1)—(SP2) is the spatiotemporal analog of (TP1), and not (SP1).

With the realization that the spatial parts of a body can be classified into two different categories, one may reasonably wonder if the spatiotemporal analogists' goal to equate spatial and temporal concepts remains a viable option. Since there are two distinct spatial components of a body, but only one temporal component, do the analogists have any grounds for asserting the similarity of space and time?

First of all, the challenge to the analogists is provide a correct temporal equivalent of (SP1), which we can label (TP0) in order to maintain the symmetrical relationship between our spatial and temporal pairs; i.e., (SP2) with (TP1), and (SP1) with (TP0). (TP0) can be identified as “the temporal parts that comprise an object at a single spatial place,” although “spatial part” can be defined in one of two ways, depending on whether you employ the (SP1) or (SP2) definition. In either case, the temporal parts are localized to either one part of a body at a single time (e.g., one foot of the entire body), or the whole body at a single time (e.g., the entire human body), following (SP1) and (SP2) respectively. What is intriguing about the temporal “value” of each of these temporal parts, in either the (SP1) or (SP2) variant of the (TP0) definition, is that they are all identical. Whether the temporal parts are assigned to the spatial parts of a body at one spatial place, or to the spatial parts over its spatial history, the temporal parts all have the same value; namely, “one instant of time” (or one temporal place). Since all temporal parts are equal, there are no variations in the relative values of the temporal parts of bodies.<sup>vi</sup> Spatial parts, on the other hand, do vary in quantity or value. The spatial parts of



a body at a single time, (SP1), differ in size (e.g., our foot is smaller than our leg), and the spatial parts of our whole bodies, (SP2), are often quite different at the many spatial places occupied over the course of our lives (e.g., our bodies take up much less volume at six months of age than at six years, or sixty years). Yet, all these different spatial parts retain the identical temporal value, since all instants of time are identical—Does this insight amount to a further unbalancing of the analogists case for spatiotemporal equivalency?

Although initially it may seem to pose a problem, the analogists can fall back upon the difference in the dimensionality of space and time to explain the identical values of temporal parts. In short, spatial parts inhabit a three-dimensional domain, whereas temporal parts are confined to a single dimension. A spatial part can expand in three dimensions, thus offering a freedom denied to the temporal parts whose single dimensionality can only allow one axis of expansion (in length). And given a Newtonian physical framework, where the nature of time is unaffected by the size and mass of physical bodies, the one-dimensional interval or extent of any temporal part will always remain the same (see Endnote 6). To condemn the analogists' project based only on this difference in dimensionality seems disingenuous, therefore. Since the hypotheses of the spatiotemporal analogists' cannot be undermined on the mere grounds of the dimensional limitation of time, the critics will need to look elsewhere for an effective means of countering the analogies.

As a second strategy for the overturning the analogist's thesis, one might utilize the newly discovered asymmetry in spatial and temporal parts, as discussed above, to question the very admissibility of the spatiotemporal objects employed in the analogies. The examples provided by Taylor and Schlesinger are not of the correct type, it might be alleged, since these analogies are instances of (SP1), and not (SP2). With the realization that the true analogous counterpart of (TP1) is (SP2), the majority, if not all, of the examples offered by the analogists, which are of the (SP1) sort, thus fail to establish the

similarity of space and time. For instance, returning to Taylor's "earthquake" analogy (as required to satisfy case (2) above), it might seem at first glance that an earthquake is a moving "object". Yet, it is not an object that moves *as a whole* relative to other objects, since, on Taylor's own admission, the earthquake simultaneously at both towns is the same earthquake. Consequently, the whole earthquake does not move relative to its surroundings; where "move" should be understood as the occupation of a different spatial place by each spatial part of the earthquake. Taylor's earthquake is an object that exhibits a variable and changing spatial extension at *one* spatial place, in the (SP1) sense, such that some parts remain fixed while others are free to wander to different locations. In Aristotelian terms, one would classify Taylor's earthquake as an object that undergoes a change in quantity (growth or diminution) at one general place, rather than a change (motion) wherein each spatial part experiences a change in place. What the spatiotemporal analogists must provide, therefore, is a clear and unambiguous instance of an (SP2) material object (and its set of spatial parts) that fulfills the case (2) requirements as outlined above: i.e., an object that occupies two separate places at the same time but can move *as a whole* to different times within that spatial distance.

Unfortunately, it is not altogether certain that Taylor's wandering earthquake example does not satisfy the criterion just described: when the earthquake occurs at the place located between the two original towns, it could be interpreted as a movement of the whole earthquake to this new position, thus fulfilling the demand for a motion of the whole object from its original position to a new spatial place. Once again, the enigmatic and equivocal properties of Taylor's specially chosen "objects" would seem to have thwarted an attempt to discredit his spatiotemporal analogies. At this juncture, one might reasonably ask if there is any plausible strategy for countering the analogist's theory?

While the previous method of attacking the analogist's case harbors various deficiencies, the seeds of a more successful strategy are implicitly contained in its general acknowledgment of the asymmetry of spatial and temporal parts. As noted in section 1,

one of the best means of undermining the spatiotemporal analogist's theory is to call into question the alleged similarities in their most basic or primary examples. In the example afforded by Taylor, the person in the doorway simultaneously occupies two spatial places, thereby satisfying case (2) (which contends that a body can occupy two spatial places at one time). However, since the spatial parts involved in this specific case are of the (SP1) variety, a noticeable difference, or disanalogy, is readily apparent in relation to the objects that comprise instances of case (1) (which holds that a body can occupy two times at a single spatial place). For the person in the doorway, the spatial part of the body located at either spatial place only contains *a spatial part of the whole object* (i.e., a foot, or leg, etc., of the entire spatially-extended person); whereas in examples that satisfy case (2), such as the pen on the desk, *the whole spatial object* is located at each temporal part. That is, any temporal slice of the pen contains its entire set of spatial parts, the whole spatially-extended pen, and not merely a part of that spatial object, such as the "left-half" or "right-half" of the pen. Any spatial slice of the object, the "left-half", for instance, fails to provide the entire spatial object, as well as the entire temporal object.

To summarize, in Taylor's case (2) example, each spatial part contains: one (SP1) spatial part of the object at a single time (say, the person's left foot at place 1), and one (TP1) temporal part of the object's complete temporal history (the person's left foot at time 1, place 1). In contrast, each temporal part of the instances that comprise case (1) exhibit: one temporal part (TP1) of the object's temporal life span (the pen at time 1), but also contain the entire (SP1) spatial object—i.e., all of the (SP1) parts of the pen at time 1, and not its "left-half" or "right-half" at time 1. The realization that the entire set of (SP1) parts are obtained in case (1), but not in case (2), thus unmasks a serious inconsistency—i.e., a disanalogy—that lies at the heart of the spatiotemporal analogists' hypothesis. Indeed, the disanalogy is evident in the most fundamental examples allotted to the hypothesis!

More importantly, this disanalogy is not subject to the problem encountered on several occasions above; namely, the use of irregular and unusual “objects” to evade the counter-arguments launched by the critics. All of the strange objects offered by the analogists, whether earthquakes, soundwaves, or island nations (our example), are instances of bodies possessing (SP1) spatial parts. That is, the spatial parts of the objects referred to in the analogies are of the (SP1) type: e.g., the earthquake’s presence at one of the towns is a spatial part of the earthquake; and one of the islands that comprise New Zealand is considered a spatial part of that country. Hence, appealing to these unusual objects to salvage the analogist’s thesis does not eliminate the disanalogies. A spatial part of Taylor’s earthquake, as an instance of case (2), still provides only a single (SP1) spatial part; whereas the temporal parts, in the examples of case (1), include all the (SP1) spatial parts. Likewise, a spatial part of New Zealand does not yield the entire nation, although a temporal part does. The fact that the appeal to these unusual objects does not eliminate the disanalogies can now be seen as the principle virtue of this line of criticism of the spatiotemporal analogists’ theory. We are also in a position to better grasp the underlying reason for the deficiency in Shorter’s analysis (as described above). With respect to such objects as island nations or university campuses, each (SP1) spatial part does not provide a complete set of (TP1) temporal parts, although each (TP1) temporal part does contain a complete set of (SP1) spatial parts.<sup>vii</sup>

By way of conclusion, it might be instructive to explore the underlying reasons for the failure of the analogists’ arguments, as well as suggest possible remedies or alternative formulations of their primary examples. In particular, one might wonder if the lessons gained from the preceding analysis can be put to work to rectify the analogies. Recalling the asymmetry in spatial and temporal parts, the quick answer to these questions revolves around the possibility of constructing analogies based on the (SP2) concept of spatial part, and not on the erroneous (SP1) model assumed by all of the analogists. Since the correct analog of (TP1) is (SP2), the analogists must produce

scenarios involving an object's (SP2) parts that satisfy case (2), just as the many examples of (TP1) temporal parts uphold case (1). Specifically, if we restrict the inquiry to the spatial parts that the *whole body* occupies over the course of its history, can we conceive possible instances where the body as a whole occupies two different spatial locations—i.e., instances where all of the (SP1) parts are simultaneously at two different (SP2) spatial locations? Once again, it is important to point out that this scenario is the true analog of case (1), since that case concerns all of those objects whose (SP1) parts (either the entire set or just one part) can exist at two separate (TP1) temporal places.

Overall, it does not seem possible to supply examples of objects whose complete set of (SP1) spatial parts are located at two (SP2) spatial places at the same time. In essence, the object would need to be “wholly in each instance”, much like a Platonic Form or universal: e.g., the pen would need to exist *as a whole* at two spatial places, such as completely on the table and completely on the floor, at the same time—and this does not seem physically possible, let alone conceptually possible. Given this more accurate interpretation of cases (1) and (2), therefore, the deficiencies in the analogies provided by Taylor and Schlesinger become fully evident, as does their claims for the similarities of spatial and temporal concepts. In short, the similarities in space and time should not blind us from acknowledging the ways in which these concepts differ, as our cases (1) and (2) clearly demonstrate.<sup>viii</sup>

## ENDNOTES

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<sup>i</sup> R. Taylor, “Spatial and Temporal Analogies And The Concept of Identity,” *The Journal of Philosophy*, vol. 52, 1955, 601. This article later re-appeared in the very popular anthology, *Problems of Space and Time*, ed. by J. J. C. Smart (New York: Macmillan, 1964). Taylor also devoted later works to this topic: “Moving About in Time”, *Philosophical Quarterly*, vol. 9, 1959, 289-301, and portions of *Metaphysics*, 3<sup>rd</sup> ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1983).

<sup>ii</sup> G. Schlesinger, “The Similarities Between Space and Time”, *Mind*, vol. 84, 1975, 161-176; G. Schlesinger, “Comparing Space and Time Once More”, vol. 87, 1978, 264-266; J. Jarvis Thomson, “Time, Space, and Objects”, *Mind*, vol. 74, 1965, 1-27; W. J. Huggett, “Losing One’s Way in Time”, *Philosophical Quarterly*, vol. 10, 1960, 264-267; B. Mayo, “Objects, Events, and Complementarity”, *Philosophical Review*, vol. 70, 1961, 340-361; B. Mayo, “Space and Time Re-Assimilated”, *Mind*, vol. 85, 1976, 576-580; F. Dretske, “Moving Backward in Time”, *Philosophical Review*, vol. 71, 1962, 94-98; J. W. Meiland, “Temporal Parts and Spatio-Temporal Analogies”, *American Philosophical Quarterly*, vol. 3, no.

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1, 1966, 64-70; J. M. Shorter, "Space and Time", *Mind*, vol. 90, 1981, 61-78. It should be noted that many of the works listed above both accept and reject various aspects of Taylor's thesis—this is especially true of Schlesinger, Mayo, and Thomson. Furthermore, this essay will focus exclusively on Taylor's analogies, since the analogies provided by Schlesinger and others do not differ substantially from the content of Taylor's original offerings.

<sup>iii</sup> For instance, with respect to the works cited above (endnote 3): Mayo's articles mainly concern the construction of plausible scenarios wherein a body can be judged to travel backwards in time; Thomson attempts to challenge Taylor's analogies by calling into question his use of the concept "object"; and Meiland strives to undermine Taylor's analogies by rejecting outright his treatment of "temporal part".

<sup>iv</sup> For example, one might strive to undermine Taylor's analogical case by insisting that an earthquake is an "event", and not an "object"; where the former is defined as possessing temporal parts (i.e., it is extended over time) while the latter does not. (See, for example, L. B. Lombard, *Events* (London: Routledge, 1986), 120-157; and, F. Dretske, "Can Events Move?", *Mind*, vol. 76, 1967, 479-492.) Although this maneuver may make more sense of our ordinary conceptions of objects and events, it is of no use in undermining Taylor's arguments. Not only does this strategy fail to account for the examples that specifically involve "objects", and not events (such as island nations or university campuses, see below), but the very appeal to an object/event dichotomy based on temporal extension begs the question against Taylor's analogies. That is, one has to assume that events are temporally extended, and objects are not, in order to defeat Taylor—but this is only one interpretation of the temporal properties of objects and events, and there are many such interpretations: e.g., Whitehead's theory, which takes events as basic and objects as derived (or at least ontologically equal); or the modern approach to spacetime physics, whose topology is based on events, not objects. (See, respectively; A. N. Whitehead, *Concept of Nature* (Cambridge: Cambridge University Press, 1920), chapter 7; and, C. Misner, K. Thorne, and J. Wheeler, *Gravitation* (San Francisco: W. H. Freeman, 1971), 6, 225.) Thus, merely defining objects and events in such a way that Taylor's thesis is eliminated by fiat would appear to be an unfruitful and ungenerous way of addressing the issue, and will certainly be rejected by Taylor. As discussed on numerous occasions in this essay, the more convincing and productive attack on Taylor's analogies should proceed by first accepting his notions of "object", "place", etc., and then move on to produce an inconsistency or disanalogy *based on his very own conceptual apparatus*.

<sup>v</sup> Shorter would appear to sanction this reading of the situation, for he later admits that "C is possible though only for a [spatially] discontinuous object." (73)

<sup>vi</sup> We are assuming a classical physics backdrop throughout this essay, since we are mainly dealing with macroscopic bodies (at low speeds, and ignoring the spatial and temporal distortions near large gravitational sources). Hence, the time dilation effects of Relativity Theory are not a factor, and this prohibits any such variance of temporal values among observers. On the whole, the spatiotemporal analogists confine their analogies to these classically well-behaved, if not mundane, macroscopic material objects (which also avoids the spatial and temporal complexities at the micro-level of Quantum Theory).

<sup>vii</sup> In all fairness, Shorter does reach a similar conclusion (73), although his objection is lost in a crowd of other, less effective, arguments. Moreover, Shorter only raises this problem explicitly with respect to one spatiotemporal analogy, and not for all the analogies. By not making this objection his fundamental argument against the spatiotemporal analogies, Shorter does not succeed in clearly and unambiguously pinpointing their primary deficiency. Similar claims can be made concerning Meiland's analysis of the analogies (70).

<sup>viii</sup> This essay has undergone a long gestation period, but I would like to thank all of the people who have provided invaluable comments over the many years that marked its (somewhat dilatory) formation: Walter Edelberg, Paul Teller, Marc Wilson, an anonymous referee from *The Southern Journal of Philosophy*, and especially (the late) Irving Thalberg.

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## **Abstract** (WORD COUNT: 100)

This paper investigates a famous argument, first introduced by Richard Taylor, that attempts to establish a radical similarity in the concepts of space and time. The argument contends that the spatial and temporal aspects of material bodies are much more alike, or analogous, than has been hitherto acknowledged. As will be demonstrated, most of the previous investigations of Taylor and company have failed to pinpoint the weakest link in their complex of analogies. By concentrating on their most fundamental cases, however, a substantial difference, or disanalogy, can be brought to light that undermines this purported equivalence of space and time.

## **Bibliography**

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