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Mosaic and tapestry: Metaphors as geographical concept generators

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Abstract
This paper examines the use of the metaphorical terms 'mosaic' and 'tapestry' in conceptualizing the structure of spatial organization over more than a century of geographic thought. The duality between a mosaic-like, discrete geography and a tapestry-like, indiscrete geography is one of the fundamental paradoxes in spatial ontology; this paper explores how this duality has configured the commitments of geography and continues to play a role in the more recent debate between 'territorial' and 'relational' spatial metaphors. It argues for a reconciliation of incompatible metaphors, since the complexity of the phenomenal world exceeds resolution into any single descriptive system.

Keywords
history of geographic thought, landscape, metaphors, mosaic, networks, regions, territory

I Introduction

Is the world more like a mosaic, made up of unique cells assembled together to form a more complicated whole, or is it more like a tapestry, with a riot of overlapping threads running over and under one another to form blurring, edgeless patterns? This may seem at first like a koan, but in fact it is a choice geographers constantly face when choosing how to describe the pattern of spatial phenomena. On the one hand, the face of the earth seems to be made up of many smaller pieces which can each be studied as whole objects in their own right – that is to say, like a mosaic. On the other hand, any time we struggle to show exactly where one place ends and another begins, we are sure to discover that these edges are cut through by a multitude of interwoven threads – that is to say, like a tapestry.

These metaphors are not just colorful rhetorical devices. To the contrary, metaphorical thinking forms a crucial medium for the formation of the concepts and theories that then circulate in general use. A metaphor begins its life as a referential nexus between one feature of the phenomenal world and another, but, once established, the metaphor's original characteristics recede to the background as it acquires ontological, methodological, and political-ideological accretions. In this way, geographers have come to think *with* mosaic and tapestry metaphors without needing to think *about* their metaphorical characteristics as such.

The purpose of this paper is to take the force of these metaphors seriously in their role as concept generators for geography. Familiar contemporary debates about such terms as

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'territory' and 'relationality' rest on a long, and oftentimes obscured, intellectual history in which metaphors play a key configuring role. The first half of this paper traces the use of the mosaic and tapestry metaphors – as well as their analogous forms – through more than a century of geographic thought. In the following section, the conceptual schism between the metaphor and tapestry is extended into the present day. These metaphorical terms continue to influence the terms of debate around new spatial logics, from Castells's 'places' and 'flows' (1989, 1999) to the theorization of such structures as 'networks,' 'assemblages,' and 'topologies' (Allen, 2011; Blum and Secor, 2011; e.g. Braun, 2006; Harrison, 2012; Hinchliffe et al., 2012; Jones, 2009; Painter, 2010).

The mosaic and tapestry metaphors do not only exert influence on theoretical debates, however. Indeed, in all manner of geographic usage, from the data structures of geospatial 'objects' and 'fields' to classroom regional geography lessons, we oscillate between mosaic-like and tapestry-like conceptualizations of geographic organization. And these metaphors have acquired ideological associations, as well, most prominently in the parallel construction where mosaic spaces represent the productions of state enclosure and tapestry spaces represent the productions of markets, communication, and mobility. In these cases, metaphor operates in an even more stealthy fashion; a process of linguistic compaction moves the terms further from the metaphorical 'is like' formation and closer to the simple 'is' formation of ontological equivalence.

The goal of this paper is emphatically *not* to adjudicate whether the world *really is* more like a mosaic or more like a tapestry. Instead, in the final section, this paper argues that the complexity of the phenomenal world exceeds resolution into any single metaphorical system. Just as with the famous 'wave-particle' paradox in physics, geographers should feel comfortable accepting a kind of 'mosaic-tapestry' dualism, since spatial organization is not really a mosaic nor really a tapestry, but exhibits characteristics of both in different situational contexts and perspectival framings. Paying closer attention to how these metaphors have been operationalized in geography takes us an important step closer to understanding the slippages inherent in this conceptual paradox.

II Metaphor and the rudiments of explanation

As the linguists George Lakoff and Mark Johnson have influentially argued, metaphorical language should not be mistakenly treated as belonging exclusively to the domain of poetic or 'extraordinary' description. 'Our ordinary conceptual system,' they note, 'in terms of which we both think and act, is fundamentally metaphorical in nature' (1980a: 454, see also 1980b, 1980c). Rather than scrutinizing metaphors from the perspective of literary criticism, then, a more useful approach attempts to examine how they underlie even our most basic explanations of the world around us. In this view, metaphor does not emerge as a stylistic flourish used for the expressive richening of already-existing concepts. Instead, metaphor provides a first-order linguistic framework on which meaningful concepts can then be constructed. Even the most casual observation of our everyday language lends evidence to this line of reasoning: consider, for example, this paragraph alone, on which I have relied on the metaphors 'treated,' 'domain,' 'perspective,' 'underlie,' 'view,' 'framework,' and others, without even bothering to draw attention to their metaphorical heft.

Of particular interest to geographers should be Lakoff and Johnson's additional observation that *spatial* relationships provide some of the most common referents for our basic conceptual system of linguistic metaphors, such that in certain cases 'spatialization is so essential a part of a concept that it is difficult for us to imagine any

alternative metaphor that might structure the concept' (Lakoff and Johnson, 1980a: 465). In metaphorical turns of phrase like 'in a superior position,' 'a falling income,' 'up-and-coming events,' or 'high-level intellectual discussion,' spatial arrangements provide a set of basic linguistic tools for describing the world around us. Subsequent research in linguistics has lent additional support to the argument that many abstract concepts, such as time, simply cannot be understood except by falling back on spatial metaphors (e.g., Boroditsky, 2000; Casasanto and Boroditsky, 2008; Casasanto et al., 2010).

Geographers have certainly not ignored the way in which metaphors are used and misused in the description of spatial phenomena (for example, Barnes, 1992; Buttimer, 1982; Cresswell, 1997; Demeritt, 1994; Ellis and Wright, 1998; Newell and Cousins, 2014; Olsson, 1992; Tuan, 1957; Vicenzotti and Trepl, 2009). But the bent of many such studies has been to assume that metaphors, in the way that they structure knowledge and therefore exercise a form of power, are by their very nature distortions of reality – distortions which must be understood in light of their ideological structuring power. While it is certainly true that metaphorical language has been employed by both coercive and subtle propagandists, we should not therefore conclude that metaphor exists in an exact inverse relationship with some imaginary perfect and independent 'reality.' Instead, we should come to terms with the ways in which metaphors structure our thinking by allowing certain intuitive objects to pass their explanatory weight onto other, less intuitive concepts. This requires placing metaphors at the beginning, and not at the end, of how we think about the generation of concepts.

The philosopher Max Black argues that in order for a metaphor to be useful, it must transpose properties between one object and another. As he puts it, 'the metaphor selects, emphasizes, suppresses, and organizes features of the principal subject by implying statements about it that normally apply to the subsidiary subject' (1981: 44). In the case of this paper, the principal subject is the geographical patterning of the world, and the subsidiary subject is two forms of artwork: the mosaic and the tapestry. What we know about the latter two comes to 'select, emphasize, suppress, and organize' what is possible to know about the former. But these selections, emphases, suppressions, and organizations should not be regarded as deceptions, or as distortions standing between us and some perfect extraperspectival truth that would be possible by recourse to non-metaphorical language. Quite to the contrary, this metaphorical pulling of one thing into another forms the very basis by which it becomes possible to understand a complex world.

III Mosaic thinking: A history of describing the world as places

> The face of the earth itself is made up of a mosaic of spaces, each space being composed of a complex of elements grouped together in intricate and intimate relationship. In detail these spaces are what we call 'landscapes'; in a broader way they are 'regions' in which more general combinations of phenomena may be observed. (James, 1971 [1935]: 286–7)

A staple textbook in American cultural geography classrooms is *The Human Mosaic,* published in its first edition in 1976 (Jordan and Rowntree, 1976) and in its 13th edition in 2013 (Domosh et al., 2013). The textbook's title is consonant with its thematic structure, which offers students a framework for conceptualizing the diversity of the world's places in terms of distinct regions and landscapes. The metaphorical resemblance of this world-of-places to a mosaic is such a basic motif for this line of thinking that it is not even explicitly discussed in the textbook itself; instead, the title recedes into the explanatory background as a matter of fact which requires no further consideration.

'Mosaic' loses its metaphorical quality and becomes a simple word carrying the meaning of, roughly, 'a collection of objects distinguished spatially.'

This division of the world into regions and landscapes, as the editors of *The Human Mosaic* note, is grounded on a tradition which stretches back in the United States to Carl O. Sauer (Jordan-Bychkov and Rowntree, 1986: xi–xii). Sauer's own invocation of the mosaic metaphor in some of his earliest work demonstrates just how fundamental this concept was to the geography of this period. In a 1921 *Annals of the Association of American Geographers* paper on land classification, Sauer described a method in which 'the area may be broken up into smaller parts,' and commented that 'in so far as this type of study can be expressed by a map, the map will reproduce the landscape as a mosaic of differing economic practices' (Sauer, 1921: 3). This mosaic structure could be used not only for description but also for practical geographic ordering. In a 1918 paper on the political geography of gerrymandering, Sauer framed the problem in terms of drawing electoral districts that matched 'the geographic unity of regions,' in which the 'determination of unit geographic areas' through cultural landscape study might become the standard for the reorganization of political borders (Sauer, 1918: 404–5).

Indeed, the very concept of 'landscape' went hand-in-hand with the mosaic metaphor, as suggested by Preston James's 1935 claim in the epigraph of this section. In 'The Morphology of Landscape,' Sauer defined 'landscape' as 'the unit concept of geography . . . an area made up of a distinct association of forms.' He went on to call the 'cultural landscape' the 'geographic area in in the final meaning (*Chore*)' (1963: 321). The invocation of this latter term, *chore*, captures the intellectual throughline which ran from European 'chorography' to the cultural landscape school, in which geographic phenomena were understood as the formative characteristics of distinct places. This view of the world is superorganic (Duncan, 1980) in the sense that it subordinates individual phenomena to their emergence in functional groupings; it binds an interacting socio-spatial complex together into a bounded whole. Just as the *choropleth* map is quite literally a cartographic portrayal of a mosaic world (see Crampton, 2011; Wright, 1938), so the *chorographic* method seeks 'to understand and represent the unique character of individual places' (Cosgrove, 2004: 59; see also Olwig, 2008).

In all of this, Sauer was comfortably within the mainstream of European geographers working during the first quarter of the 20th century. Sauer pointed to Johann Sölch as having defined the term *chore* to 'designate the same idea' as his own conception of landscape (1963: 321; the reference is to Sölch, 1924). French geography also emphasized the distinctiveness of discrete geographic entities; Paul Vidal de la Blache's extensive regional studies of France were based upon what Anne Buttimer describes as a 'mosaic of natural *pays*' (1971: 76; see also the discussion on the importance of the mosaic metaphor in Swedish geography in Buttimer and Mels, 2006). In 1942, Hans Bobek explained that geographers sought to understand 'spatial structure as it can be comprehended through our senses and the active forces which are behind it in a complicated relationship and which produce the mosaic of phenomena' (qtd. in Fischer, 1948: 309). Robert E. Dickinson, in a 1939 article defending the cultural landscape concept, offered a survey of the intellectual contributions to the school of thought which linked *Landschaft*, chorography, and the formation of places as distinct regional or subregional entities. In Germany, he pointed to Schlüter, Passarge, Penck, Krebs, and Waibel; in France to Jean Brunhes; and in the United States to Sauer. All of these, Dickinson pointed out, concurred in the basic premise that 'the units of landscape are areal forms' (Dickinson, 1939: 12).

The mosaic concept was therefore doing meaningful work in the thematic conceptualization of geography in the early 20th century. A view of the world as a mosaic of geographically-distinct objects of study was instrumental to the consolidation of geography as a 'scientific' discipline. As Vernor Finch put it in a 1934 article on how to write regional geography, the goal was to avoid 'the compartmentalization of facts upon a topical basis' and to instead describe 'a regional mosaic' (1934: 119). The Finnish geographer J. G. Granö, in his attempt to lay out the commitments of a 'pure' geography, emphasized the fundamental importance of describing a world consisting of discrete entities. 'It is individuals that are considered interesting in the first place,' Granö insisted, adding that 'these include localities, districts, geographical provinces, and vicinities, for example' (1997: 30). Describing his work as a continuation of Schlüter and Penck's efforts, Granö wrote that 'even the first methodologists of geography . . . understood that the earth's surface is an enormous mosaic of environments' (1997: 30)

'Geography,' Granö stressed, 'is a science that forms entities' (1997: 133). To rest this claim on a theory of science, Granö turned to the German philosopher Fritz Neeff, who, in his 1925 treatise *Der Geist der Wissenschaft*, argued that the three methods of science lay in the formation of rules, of history, and of wholes. It was in this latter line of pursuit, the discovery of 'entities' – which Neeff described as 'something complete, confined as such' – that Granö located the work of the geographer (qtd. in Granö, 1997: 32–33; original in Neeff, 1925). This ontological stance, in which distinct places act as the fundamental geographic entities, relied heavily on the mosaic as a controlling metaphor.

Therefore, although these early 20th-century geographers had numerous methodological disagreements with one another, they largely concurred that part of their discipline-defining task was making geography 'a discipline concerned with a world mosaic of places,' as Koelsch (2001: 269) describes it in retrospect. Such a perspective was undoubtedly colored by the relatively static perspective of the physical and biotic world that was prominent at the time, with its emphasis on categorization and classification, and this tendency illustrates how closely these early human geographers steered towards the methodological biases of the nonhuman sciences. To slice out a section of the world for individualized scrutiny, and to categorize space into a system of stable, classifiable units, was not yet seen as a violation of the principles of complexity and interdependence; instead, it matched with the work of natural scientists who sought to organize the world into taxonomies and empirically-limited objects.

IV The legacy of the mosaic: An ongoing hunt for unit geographies

Even as the influence of the early cultural-landscape and regional geographers began to fade, the major conceptual import of the mosaic metaphor persisted. Indeed, it lay at the very core of any geographical methodology which proposed to ground the discipline as the science of distinct regions or areas. The decades-long theoretical struggles to rest regional geography on a valid ontological proof of the existence of regional entities was therefore underwritten in large part by the mosaic metaphor. Consequently, examining the use and contestation of the mosaic metaphor goes a long way towards connecting the ideas about region and territory that ramified through many branches of mid-century geographic thought.

A report by Derwent Whittlesey which appeared in the Association of American Geographers' 1954 state-of-the-field review identified the same problem about cellular unit geography which had troubled an earlier generation. 'The great majority of historians, anthropologists, and sociologists,' Whittlesey's report noted, 'seem not to have questioned the nature

of regions as objects or given segments of spatial totality' (Whittlesey, 1954: 44). If social scientists and laypeople alike had failed to examine the status of places as 'objects,' as Whittlesey claimed, it became the task of geographers to critically analyze what kinds of places were and were not meaningfully whole. Whittlesey proposed three types of regions which might exhibit the quality of unity, classifying them as 'single-feature,' 'multiple-feature,' and 'total' regions. These latter 'total' units, as Whittlesey described them, were those 'differentiated in terms of the entire content of human occupance . . . an association of interrelated natural and societal features chosen from a still more complex totality' (Whittlesey, 1954: 35–6).

Rejecting existing words, such as 'area' and 'region,' for their 'burden of other connotations,' Whittlesey and his committee suggested the term 'compage' to refer to such unitary areas, and cited the word's little-known definition: 'a joining together . . . a whole formed by the compaction or juncture of parts' (Whittlesey, 1954: 35–6; for more on the brief life of 'compage' within the discipline of geography, see Bunge, 1966: 257; Dickinson, 1976: xiii–xiv; Walter and Bernard, 1978: 193; Whittlesey, 1956). The semantic inheritance between 'chore' and 'compage' was echoed by Hart and Mather (1953), who proposed a new cartographic innovation called the 'chorographic compage map' which would segment areas into compages and display statistical information about each one, like distinct segments of a mosaic.

Others have suggested various other terms to describe the unit phenomenon out of which a mosaic of areal entities might be built. Hans Carol proposed 'geomere' in 1956. In 1962, Gerben de Jong tried to put the concept of 'chorological differentiation' back on a theoretical founding beginning with Brunhes and Vidal de la Blache. 'The concept *chora* refers to a portion of the world which can be distinguished from the surrounding world,' de Jong argued (1962: 14). He believed that it was possible to isolate 'a geographic region of vertical integration,' which formed 'a unity on the ground of definite interrelated phenomena' (p. 61). Drawing on German geographers' concepts of *Ökotop* (ecotope), *Soziotope* (socio-tope), *Kleinlandchaft* (smallest-unit landscape), and *Einzellandschaft* (unitary landscape), de Jong promoted the idea of an 'ecological complex' called a 'Geotope' which formed as the result of physical and cultural forces acting on one another to produce a recognizably differentiated geographic entity (pp. 64–74).

Similar terminology has also been used by geographers drawing inspiration from a more biologically-influenced strand of 20th-century environmental ideas. The influential American ecologist Howard T. Odum, for example, explained that 'regional ecosystems are an organized mosaic' (1983: 532). Field ecologists, confronted with the practical problem of describing 'the smallest tangible bodies that can be called land(scape)' used the term 'ecotope' for this purpose, and, subsequently, human ecologists borrowed this language to describe culture-nature areas in their geographic totality (Haber, 1990; Naveh, 2000; Zonneveld, 1989: 82). In a similar ecologically-influenced reading, the Israeli geographer Dov Nir, borrowing from Arthur Koestler and Plato, has argued for a 'socio-environmental system' termed the 'holon' which again draws its referential power from a mosaic-like metaphor: 'inwardly, within the content of a certain structure, it constitutes a whole and something final for its components,' while 'outwardly, the region is one of the components constituting greater wholes' (Nir, 1990: 23–5; see also Bland and Bell, 2007).

In its broadest, most naïvely recognizable guise, the term for 'Landschaft,' 'compage,' 'chora,' or 'geotope' is simply *place.* Albrecht Penck, writing about the 'chorological manner of viewing things,' described it as 'correlating an aggregation of various units, which is tied to

a particular spot of the earth' (Penck, 1927: 640). Over half a century later, Donald Meinig explained that 'every landscape is a locality, an individual piece in the infinitely varied mosaic of the earth' (1979: 45). Around the same time, the regional planner Kevin Lynch argued that 'cities are systems of access that pass through mosaics of territory' (Lynch, 1976: 21). The singularity implied in those formulas – discrete unit localities arranged in a specific geographic layout – demonstrates the basic relationship between the ontological totality implied by the segments of a mosaic metaphor and the geographic individuality of places. Insofar as most people's inherent imagination of the world consists of a collection of discrete places, a series of identifiable 'heres' and 'theres' in which an individual or a site may be situated at any given time, the mosaic metaphor corresponds well with a lay conception about how geographic variation is structured. The repetition of political maps of nations and states with their mosaic-like colored quality does much to reiterate this widespread understanding of the world as divided into distinct place-entities.

What is particularly striking about the continued power of the mosaic metaphor in configuring a vision of the world made up of discrete places is the way in which it has continued to be pressed into service even when the metaphor itself begins to bend out of recognition. Though the mosaic metaphor in its strictest sense refers to a geography bound into unique cells meeting one another at the edges, geographers have continued to use it to refer to distinct places which do not observe this cellular behavior.

Brenner, for instance, invokes the mosaic metaphor in the following way: 'Processes of scalar structuration do not produce a single nested scalar hierarchy, an absolute pyramid of neatly interlocking scales, but are better understood as a mosaic of unevenly superimposed and densely interlayered scalar geometries' (2001: 606). The retention of the mosaic metaphor here is instructive because of the degree to which it can be tampered with while retaining its basic signification. Mosaics – the art form – are neither 'unevenly superimposed' nor 'densely interlayered.' Yet Brenner is able to enlist 'mosaic' as the shorthand term for a world made up of distinct pieces, and the basic conceptual work of that metaphor is still preserved even as its metaphorical link is severed. As Paasi writes while reviewing the TPSN (territory, place, scale, networks) theory of Brenner, Jessop, and Jones, 'words . . . tend to create a certain fixity and continuity in their concepts' (2008: 405). In the course of its repeated use as metaphor, 'mosaic' has bled together with the concept of 'place' in its meaning as a discrete geographical entity – so much so that there is hardly any concept of 'place' which does *not* rely somewhere in its conceptual scheme on the referent of a mosaic. Thus the metaphor sheds its supposedly metaphorical quality and gains an almost metonymic identification with the phenomena described.

V Tapestry thinking: A history of describing the world as flows

> Consequently, so far as we can see at present, the face of the earth is the very antithesis of a mosaic – much closer to reality, presumably, is Huntington's expressive picture of 'The Terrestrial Canvas.' (Hartshorne, 1939: 252; the reference is to Chapter 1 of Huntington, 1927)

Paasi describes recent geographical critiques of boundedness as an assault on 'the account of the world as a mosaic of separate cultures' (2002: 807), and indeed the theoretical disputations of regions, landscapes, and places have for many years rhetorically defined themselves in contradistinction to the mosaic metaphor. Richard Hartshorne's 1939 *The Nature of Geography* has typically been interpreted as an attempt to set the discipline of geography on a common methodological footing, ridding it of the allegedly 'unscientific' habits of thought which

developed as a result of borrowing from many other fields of study (Entrikin and Brunn, 1989). In this goal of methodological purification, however, Hartshorne repeatedly returned to what he believed was a major conceptual error in geographic thinking up to that point: the interpretation of the world as a mosaic. In particular, he targeted Sauer's equivalence between landscapes and geographic unity as an exemplar of this folly. While some have interpreted the Sauer–Hartshorne schism as one primarily characterized as a dispute between descriptive and systematic epistemologies (e.g. Harvey and Wardenga, 2006; Cronon, 2015), the debate was just as much about choosing which metaphor best captured the real pattern of spatial variation.

In his section on 'the concept of the region as a concrete unit object,' Hartshorne attempted to pick apart the intellectual history by which geographers had depicted the world as a mosaic of geographic units. 'The region, or *Landschaft,*' Hartshorne explained, 'is said to constitute a definite individual unit that has form and structure, and is therefore a concrete object so related to others like it that the face of the earth may be thought of "as made up of a mosaic of individual landscapes or regions"' (1939: 250; Hartshorne did not reference the source of this internal quote). Hartshorne could barely conceal his disdain for the assumptions which this mosaic metaphor carried. 'When geographers say that regions are individual objects,' he complained, 'they are telling us something that is hard to believe' (p. 251).

Hartshorne went on to conclude that he could not see any proof on which to justify the belief that regions – or any other areal entities – form meaningful wholes. There was only 'one individual, unitary, concrete object of study,' he believed, which was 'the whole world' (p. 262). Even loosening the mosaic metaphor to allow for fuzzy-edged regions was not, in Hartshorne's view, enough to salvage the ontological status of areal entities: 'we do not have a situation analogous to the colors in a rainbow, which one might recognize as forming distinct bands even though we cannot distinguish exactly where one merges into another' (p. 267). His principle, then, was to treat the geographic unit as nothing more than an explanatory exigency, drawn by observational fiat and having no ontological status inhering in the structure of the world itself. Regional geography might for convenience and simplicity take on 'the character of a mosaic of individual pieces . . . But we are not to be deceived into regarding this mosaic which we have made as a correct reproduction of reality' (p. 440).

Against the mosaic metaphor, Hartshorne likened the world instead to 'the interrelated combination of different color designs each applied by different artists working more [or] less independently, and each changing his plan as he proceeded' (p. 441). The geographer's work might entail 'reduc[ing] the subtle gradations which the different artists of nature have applied and intermixed on the face of the earth, to the stiff and arbitrary form of the mosaic technique' (p. 441), but this reductive practice did nothing to modify the blurry, indiscrete quality of the world itself. Hartshorne's anti-mosaic metaphor was a 'canvas' in this instance, and indeed the metaphorical invocations of edgelessness have been more varied than the oft-repeated mosaic metaphor. I have chosen 'tapestry' to group these metaphors together because of the way that this metaphor captures the features of edgeless interconnection which lie at the conceptual antipode to the mosaic metaphor. This is not meant to erase the differences between the many different ways in which geographers have described space as threaded and textured, but rather to emphasize the way in which this metaphor positions itself in contradistinction to the ontological character of the cellular mosaic.

Time and time again, observers have returned to the metaphor of weaving in order to emphasize a form of geography which is conceived in

terms of links, connections, and blurring rather than bounded, total entities. Sometimes this took the word 'tapestry,' but allied metaphors of looms, threads, and weaving also came into common use for the same purpose.

At the end of the 19th century, when cities began to overspill their borders and link together in new interlined patterns, the tapestry metaphor entered common currency to describe the new spatial patterns characteristic of 'modernity.' One Boston observer referred to the electric trolley as 'weaving over the land a finer mesh of steel . . . carrying out . . . a sort of village-to-village and house-to-house shuttle-work' (Baxter, 1898: 61). The planner-biologist Patrick Geddes wrote about the complexity of modern urban life in terms of 'innumerable looms' whose 'webs are themselves anew caught up to serve as threads again, with new and vaster combinations' (1915: 5). Robert Sack included an actual illustration of a loom, complete with weaving shuttle, to describe how the 'composition (tapestry or fabric) of places' was woven out of a group of conceptual threads (Sack, 1988: 644–5). The tapestry metaphor has an intimate relationship with complexity and irreducibility which the mosaic metaphor does not, as demonstrated, for instance, in Ellegård and de Pater's description of 'the complex tapestry of everyday life' (1999).

The tapestry metaphor has been reiterated by geographers who have sought to put flows and forces as ontologically prior to places and sites. Qviström, referring to the way in which globalization and multiculturalism have challenged the status of regional landscapes, argues that 'A weave of different times and rhythms, focusing on timescapes rather than scenery, facilitates descriptions of a complex local/national/global identity' (2004: 195). Dear explains his approach to social theory as a question of 'how we conceptualize the processes of human life on this tapestry' (1988: 268). In an explanation of actor-network theory, Murdoch describes it as seeking 'to follow network builders as they stitch together durable associations through space and time' (1998: 367). Platt (2014), in an influential textbook on land use, refers to the many overlapping jurisdictions and authorities found in metropolitan areas as 'the tapestry of local governments.'

VI From mosaic and tapestry to territory and networks

Perhaps the most influential variant of the tapestry metaphor in recent decades has been the 'network,' likely due to its association with the communications technologies that seem to dramatically illustrate the connectedness of modern social life (Knox et al., 2006). For geographers, the network metaphor has become familiar in debates around the 'territorial' or 'relational' conceptualizations of space (see, e.g., Amin, 2004; Jones, 2009; Massey, 2004b, 2005; Murdoch, 2006; Painter, 2010). Broadly speaking, these lines of critique have attempted to move from a mosaic-like to a tapestry-like depiction of the structure of geography by elevating such tapestry-like metaphors as flows, networks, relations, rhizomes, and fuzziness to a preeminent place in descriptive work. The result of this shift from mosaic to tapestry, then, is an increasingly dominant assertion that spatiality is best conceived 'in relational terms as multiple and fluid because identities are increasingly associated with mobility, networks, and interactions occurring in "soft spaces" and across "fuzzy boundaries"' (Paasi, 2013: 1207). While these various alternative metaphors are not perfectly interchangeable with one another – the network and the rhizome, for instance, offer different theories of interconnection – they nevertheless all challenge the structural ontology of discrete place-based entities which rests upon the mosaic metaphor.

A problematic feature of many of these debates, however, is their presentism. Paasi argues that this is in part a consequence of scholars 'dazzled by the power of globalization' and

the rapid timescales within which familiar geographies are being unmade (2009: 214). In fact, as this intellectual history has tried to document, the tension between a cellular and an interwoven geography has been the source of conflict and debate for much longer than is often acknowledged in present-day theorizations. Edgeless geographies are not of-the-moment novelties produced by the internet, neoliberal capitalism, mass migration, or global pollutants. Instead, the tension between discrete and indiscrete geographic variation resides in the ontological nature of space itself.

One of the key features of this debate is whether distinct places have an ontological standing prior to their use as descriptive categories, or whether they are simply convenient fictions of the kind described by Hartshorne. 'The region itself, we find, is not determined in nature or in reality,' Hartshorne argued, and in so doing he fixed the stakes of the debate in terms of a 'nature' or 'reality' against which descriptions of the world must be measured. Approaching the problem from a very different theoretical point of view, the anthropologist Tim Ingold nevertheless also attempts to dispute the mosaic metaphor in terms of similar realist appeal. Although 'it appears that the division of the world into a mosaic of externally bounded segments is entailed in the very production of spatial meaning,' Ingold argues that 'a place in the landscape is not "cut out" from the whole'; places, therefore, 'have no boundaries' (1993: 155–6).

Though Hartshorne and Ingold certainly do not share many intellectual similarities, in this example they both illustrate how metaphorical language has been pressed into service as a method of arguing about how the world *really is*. As an alternative, we could shift from an obsession with what is 'real' to a more processual concern with what is 'realized.' Alfred North Whitehead's famous example of Cleopatra's Needle is instructive in this case. He noted that, from an intuitive point of view, there exists a thing (we could call it a very small *place*) called Cleopatra's Needle in London. Yet, subject to a stricter scrutiny, that claim was liable to break down: 'Where does Cleopatra's Needle begin and where does it end?' Whitehead asked. 'Is the soot part of it? Is it a different object when it sheds a molecule or when its surface enters into chemical combination with the acid of a London fog?' (1920: 171). In the face of this blurry edgelessness, Whitehead was forced to conclude that the only true 'scientific objects' were the elemental components of matter. Yet he maintained that other entities and objects nevertheless did exist, for they were extracted out of the infinitely-varying flux of nature through a process which he called 'concrescence.' This he theorized as 'the process in which the universe of many things acquires an individual unity in a determinate relegation of each item of the "many" to its subordination in the constitution of a novel "one"' (Whitehead, 1966: 7; see also the interesting philosophical literature on 'vague objects,' which almost invariably employs geographic problems as its examples; e.g. Copeland, 1995; Garrett, 1991; Noonan, 2004; Sainsbury, 1989; Tye, 1990).

A useful likeness may be drawn to what is essentially the chronological analog of the geographic place-unit: the historical period. The authors of *The Human Mosaic* textbook lean on this comparison: 'both periods and regions are characterized by certain unifying traits that justify picking them out of time and space' (Jordan-Bychkov and Rowntree, 1986: 3). Yet of course we know that periods are not 'real' in the sense of having an ontological standing outside of the convenience of the observer. The real phenomena of history do not segment neatly into discrete chronological entities, and wherever the historian draws a border, that border always marks an interruption of the threaded stories which cross it. As the novelist Thornton Wilder put it:

> . . . beginnings and endings are arbitrary conventions – makeshifts parading as self-sufficient entities, diffusing petty comfort or petty despair. The cumbrous shears of the historian cut out a few figures and a brief passage of time from that enormous tapestry. Above and below the laceration, to the right and left of it, the severed threads protest against the injunction, against the imposture. (1967: 395)

Here Wilder uses the tapestry convention for time in the way that that some geographers have used it for space. At the points where we draw a border, chronological or spatial, the 'severed threads' serve as evidence of the way that we have violated a fundamental interconnectedness by selecting out a discrete subsection.

We may say that we belong historically to time-units like 'the 21st century' or 'the information age' and maintain the assertion that these are simply imaginary but useful categorizations. However, when we say that we belong to a space-unit like 'Greater London' or 'the United States,' we may insist that the flowing, tapestry-like web of flows and forces makes these unit geographies 'not real' – and still nevertheless find ourselves obligated to pay taxes, elect representatives, and have our passports stamped according to our position in this mosaic-like geography of discrete places. As Harrison puts it, the 'emergent spatial strategy of networks is unable to escape the existing territorial mosaic of politico-administrative units' (2012: 71); or, as Massey notes, 'in this world so often described as a space of flows, so much of our formal democratic politics is organised territorially' (2004a: 9)

Paasi and Zimmerbauer label this the 'planning paradox': the fact that 'regional spaces may be simultaneously bounded and porous' – in other words, sharply bounded mosaic-like forms of spatial organization jostle and overlap with edgeless, flowing, tapestry-like forms of spatial organization (2016: 76). Critiquing the metaphorically weak concept of 'fuzzy' borders, they instead propose 'penumbral borders' which are 'highly selective in terms of flows and closures,' and which are 'activated in both context- and time-contingent junctures' (p. 87). Consequently, the goal should be to situate, both in terms of human social forces and in terms of the contingencies of history, the moments where mosaic-like and tapestry-like conceptions and operationalizations of space have come into action. As Paasi puts it elsewhere, such a line of thinking must emphasize 'a historical analysis of the processes of signification and legitimation that have been crucial for the production and reproduction of socio-spatial consciousness' (2009: 230). Through the addition of history, context, and contingency, it becomes possible to relax the obsession with what is strictly *real* and pay attention instead to what *has been realized* at certain times by certain people.

The addition of a new metaphor – the penumbra – should be yet another reminder of the degree to which explanatory systems must always find recourse to other things which are *like* the question in hand. In the switching back and forth between various metaphors which provisionally suit a given conceptualization of what is always bound to be a still-more-complex totality, whose 'real' qualities perpetually elude resolution into a final description, we confront the impossibility of ever stating with a final conclusion that the 'real'-ness of the world supports one or the other metaphorical depiction.

This slipping back and forth between metaphors should lead us to reject 'the widespread view in geography that "territory" and "network" are incommensurable forms of spatial organisation' (Painter, 2010: 1115). Indeed, both territory and network, just like both mosaic and tapestry, provide room for one another precisely in the degree to which they cannot perfectly capture the complexity of the world's structure. Here Torsten Hägerstrand's use of both mosaic and tapestry metaphors in concert with one another is instructive. Hägerstrand refers to both 'the landscape mosaic' and 'the

big tapestry of Nature which history is weaving' (1976: 331–2). As he puts it:

> I do believe that the study in depth of the very 'togetherness' of phenomena in space and time is one which we must consider. It is in this togetherness that we can find the very source of first principles of a significance which reaches far beyond regional investigations per se. (p. 331)

The togetherness of phenomena is what produces a mosaic, for it binds together interacting entities into a whole: what Hägerstrand has elsewhere called the 'diorama,' which, with its '*thereness* aspect' finds 'all sorts of entities . . . in touch with each other,' much like a mosaic (Hägerstrand, 1982: 326). Yet this belief did not stop Hägerstrand from 'see[ing], almost literally, the opulence of the world as a *moiré* of processes' (Hägerstrand, 1983: 239; a *moiré* is a weaving pattern of lines named after a type of textile) nor from titling his final book *Tillvaroväven* (2009) – roughly, in English, the 'weave-work of existence.' Buttimer describes this dualism in her biography of Hägerstrand: as he oscillated between conceiving of the world as 'packets of filled-up space on the one hand, and flows of energy and information on the other . . . . This duality has always characterized geography' (2007: 136).

VII Mosaic and tapestry in practice and politics

Whether to treat space as a mosaic or a tapestry ramifies into cartographic logic, where, as Jeremy Crampton has shown (2011), the choice between the choropleth and the cline map corresponds with epistemological-ideological assumptions about whether human geography should be interpreted in terms of whole sets or in terms of continuously-varying gradients. Crampton uses choropleth and cline maps as representatives of the 'bounded areal units' and 'continuous or gradual change' systems of spatial structure, respectively, and points to the way that these visual methods 'refer to very different pictures or understanding of spatial structure' (2001: 31). But, as he accurately observes, these systems are not value-neutral. The choropleth map, Crampton argues, has been used to produce and reproduce a form of knowledge-power which assigns individuals to fixed, essentialized categories. 'By setting up categories of opposition (such as races) and other identities rather than a graded geo-biodiversity,' Crampton writes, 'we are partaking in a rather modern discourse of partisanship' (p. 39). Against this ontologically rigid establishment of categories which is the work of choropleth or mosaic thinking, Crampton goes on to 'suggest we use clines to explore human identity, rather than bounded areas or groups' (p. 45).

Geographers working with GIS systems have also grappled with the problem of edged versus edgeless phenomena. Galton (2003) describes the 'geo-ontology' of 'objects' and 'fields,' the former mosaic-like and the latter tapestry-like. Vector-based geospatial data structures, with their reliance on shapes and closed polygons, tend to produce an ontology of bounded objects, whereas some raster-based data structures are better at depicting fuzzy edges or gradients. The tension between these is not that one is more 'real' than the other, but that they alternatively capture different aspects of spatial variation. As several scholars have pointed out, there is an inherent limitation in the ability of either mosaic-like or tapestry-like encodings to perfectly represent the actuality of the world (see, e.g., Couclelis, 1992; Cova, 2016; Goodchild et al., 2007).

The ontological choice between bounded and boundless space is familiar outside of cartography and GIS as one of the key political-ideological characteristics of scholars who have sought to criticize a territorial understanding of geography. For these critics, the mosaic's implication of territorial boundedness is best illustrated in nationalism, fortified boundaries, capitalist order, and state surveillance; the

mosaic therefore becomes the exclusive spatial tool of the territorial state (e.g., Alatout, 2006; Elden, 2007; Hannah, 2000; Newman, 1999; Shapiro and Alker, 1996). A common refrain amongst these critiques is the contention that the very possibility of territoriality itself – that is to say, the drawing of any discrete geographic objects with recognizably terminal boundaries – cannot be decoupled, either historically or theoretically, from the project of power consolidation as undertaken by the modern nation-state. Elden, drawing heavily on Foucault, has persuasively linked the emergence of territory as an ontological concept to the development of national sovereignty from classical antiquity through the Treaty of Westphalia (Brenner and Elden, 2009; Elden, 2013b, see also 2013a). Agnew has identified the 'merging of the state with a clearly bounded territory' as the 'trap' which ensnares international-relations theoreticians into ignoring power relationships which do not match with nations' sovereign boundaries (1994: 56). Elsewhere, Agnew writes that 'an image of the world as a mosaic of bounded "peoples", "cultures", and "societies"' creates a series of geographic 'entities' to which historical actions are 'fallaciously ascribed' (Agnew, 2007: 141).

This is a compelling observation, and indeed the political power of the closed mosaic cell to fix and rigidify fluid categories of identity and belonging is certainly one which deserves resistance from critical geographers. In general, geographers have done considerable work to highlight the sinister aspects of the mosaic–territory–boundaries structure and, in so doing, have tended either to explicitly or implicitly endorse the tapestry–flows–relationships structure as a counterpoised one which opens the possibility for a progressive or liberatory politics. As Massey has influentially put it, instead of the 'hegemonic geography of care and responsibility' which is 'utterly territorial,' we ought instead to give voice to a geographic system in which places are treated as 'criss-crossings in the wider power-geometries which constitute both themselves and "the global"' (Massey, 2004a: 9–11).

But we should take pause before permanently assigning a normative stance in which the mosaic metaphor is regressive and the tapestry metaphor progressive. Borders and boundaries can, and very often are, the tools of coercive power – but not *always.* Sanctuary cities, campus safe spaces, indigenous movements which claim sovereignty over ancestral lands, and countless other examples show the way in which creating a distinct 'here,' a unit of geography separated for one reason or another from the flows and forces which swirl around it, can work for the purposes of resistance and empowerment. Conversely, what is more suited to a tapestry-like world than the frictionlessness of neoliberal global capitalism, cutting over formerly sacrosanct boundaries just as it pleases and weaving a continually varying and unequal pattern of enrichment and poverty? Bordered spatial entities can serve a logic of division and differentiation. But they can also serve a logic of cohesion and togetherness: it is only by sharing membership in some common entity, which in geographic terms means belonging to 'the same place,' that the conditions of equality become possible. Instead of assigning permanent normative categories to the mosaic structure and the tapestry structure, we would be better served by noting where boundary-making can be coercive and where it can exercise the work of solidarity; where edgelessness can lead to emancipation and where it can lead to violation.

William Bunge, for instance, drew a distinction between the '"official" regions defined by city hall' and 'the people-defined regions of a city . . . the communities in which people perceive of themselves as being' (1974: 98). He hoped that participatory geographic research in the city could discover an actually-lived, rather than administratively-denoted, mosaic of communities, and wrote that 'in any plan to give power to the people these people-defined regions must be the regions which are given political and

cultural power.' The anarchist communitarian thinker Murray Bookchin similarly based his political radicalism on replacing the coercive mosaic of nation-states with an 'organic' mosaic of cooperative regions. Drawing on the Athenian concept of *isonomia* – the equality in political standing of those sharing a 'single' place – Bookchin advocates for a polity formed from 'an organic community, a community that has a sense of identity and personality' (1992: 154). Hannah Arendt, writing about the Jeffersonian ward, the French commune, the German *Räte,* and the Russian soviet, concluded that 'Freedom, wherever it has existed as a tangible reality, has always been spatially limited,' and went on to invoke another mosaic-like metaphor, the oasis:

> If we equate these spaces of freedom . . . with the political realm itself, we shall be inclined to think of them as islands in a sea or as oases in a desert. This image, I believe, is suggested to us not merely by the consistency of a metaphor but by the record of history as well, (1963: 279)

VIII Conclusion: Mosaic–tapestry duality

The world is not a mosaic and it is not a tapestry: only a mosaic is a mosaic and a tapestry a tapestry. Yet these metaphors, along with ones similar to them, have been used by geographers for many years to describe the way geographic phenomena are organized. The mosaic metaphor pulls geography towards a discrete system of places; the tapestry metaphor pulls geography towards an edgeless system of ever-varying interconnected forces. The surprising repetition of these metaphors throughout more than a century of geographic thought demonstrates just how instrumental these linguistic constructs have been in forming the conceptual systems within which methodological and theoretical traditions have evolved. But the intellectual history of the mosaic and the tapestry do not merely tell us something interesting about how geographers have thought about and described the world. It also gives voice to a fundamental instability in the ontological organization of the world – that between entities and flows.

In a famous example of metaphorical slippage, physicists have struggled to explain whether light is metaphorically more like a wave or a like a particle. Because it exhibits certain characteristics of both, a kind of metaphorical detente has been proposed: light is *both* wave-like and particle-like. Similarly, we might say that the pattern of geography is both mosaic-like and tapestry-like. Whether it is treated as a collection of discrete geographic entities or a varying field of edgeless mobile forces is conditioned on history, politics, and ideology as much as it is on the paradoxical qualities of the pattern of the world itself.

Because the richness of the world exceeds the capacity of any single metaphor, relying on contradictory metaphors should not only be permissible but indeed encouraged. Just as Hägerstrand could jump between metaphors of weaving and entityhood within a single clause – he described landscape as a 'plaited weave of trajectories of room-occupying entities which come into being, meet, stay in touch, part, and disappear' (1995: 93) – so too should we feel comfortable mixing our descriptive language such that it fits the multiple aspects of the world itself. After all, this language is not an ornamental embellishment or a deceptive bit of propaganda, but rather the basic mechanism through which our language makes sense of a phenomenal world that will always elude final systematization.

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