

# Infrastructures in Practice, Market Dynamics, and Historical Railways Tourism: The Appleton's Guide to the United States and Canada, 1879

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## Abstract

This work historically analyses the infrastructural dynamics of the North American railway system and proposes a connection between the concepts of space, materiality and institutional dynamics which can be used for tourism management studies. The theory-building case study (in a grounded theory approach) is based on a BBC travel documentary on the *Appleton's General Guide* of 1879. Starting from the concepts of "production of space" and "socio-spatial relations", the introduction of the specific material infrastructure dimension allows us: i) to pinpoint a theoretical framework over four levels (territory, place, scale, networks) in order to study the "institutional dynamics of markets"; (ii) and suggests a possible *practice-based* turn in destination marketing studies.

**Keywords:** *material infrastructure, socio-spatial relations, market systems, Appleton's Guide*

## Introduction and theoretical context

John Urry places the emergence of the modern concept of mobility in England around 1840, "[so] this led to new machines, new organizations and new materialities" (Urry, in de Vaujany, Mitev 2013: 265). The first phase of the English railway system was developed between 1840 and 1846 and the first Bradshaw's timetable (1839) would contribute to the introduction of the Greenwich Mean Time (GMT) in 1847. A daily excursion on the railway between Loughborough and Leicester in 1841 became the very first organised trip. The nascent English working class began to get about by train and collective practices formed which the Thomas Cook Company would then go on to spread between 1840 and 1860: the travel reservation system was created; luggage began to travel separately; travel and accommodation were now considered integrated services. The same ferment around the theme of mobility also involved continental Europe and, in even more disruptive ways, North America (see *Appendix*, table 1: *SAR, GRR, IR, RJ*).

Inspired by a BBC travel documentary that retraces the railroad tourist itineraries of the *Appleton's General Guide* of 1879, this research project historically investigates the infrastructural dynamics of the United States railway system. The main topic of this work is the emergence of a connection between the concepts of space, materiality and institutional dynamics (de Vaujany, Mitev 2013), suggesting a possible *practice-based* interpretation of destination marketing studies. The concepts introduced have a common root in theories of practice (Reckwitz 2002b; Nicolini 2012): if, according to Schatzki, "practices are organised sets of doings and sayings [...], and the organisations common to doings and sayings are made up of rules, teleological-affective structures and both practical and general understandings" (in

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Hui *et al.* 2017, p. 129); in marketing studies Araujo *et al.* (2010) suggest that markets are practical outcomes of organizing efforts (Warde 2005; Shove *et al.* 2009).

Materiality and institutional dynamics are concepts that can easily be approached through theories of practices which address the role of artefacts in the interpretation of social phenomena and in the processes of change (Reckwitz 2002, 2002a, Schatzki 2002, Hui *et al.*, 2017; Shove *et al.*, 2009). Nicolini (2012) presents these categories: the perspectives of boundary objects and epistemic objects, the cultural-historical-activity theory, the perspective of the material infrastructure. This work addresses this last dimension (Bowker, Star 1999): (i) if on the one hand “infrastructures are extended material assemblages that generate effects and structure social relations, either through engineered (i.e. planned and purposefully crafted) or non-engineered (i.e. unplanned and emergent) activities” (Harvey *et al.* 2017); (ii) on the other, “infrastructures, the social practices they sustain, the devices and appliances involved and the patterns of demand that follow are interlinked and that they mutually influence each other” (Shove, Trentmann 2019).

Moreover, starting from the concepts of production of space (Lefebvre 1991) and sociospatial relations (Jessop *et al.*, 2008), it is possible to face the link between the role of infrastructure materiality in social transformations and the spatial dimension of markets defined as “an organizational field encompassing a set of institutions and actors, governed by institutional logics, supported by institutional work, and characterized by institutional boundaries” (Dolbec, Fisher 2015, p. 1449). The approach to the market system dynamics (Marketing Theory 2017) is linked to a theoretical framework on four levels (territory, place, scale, networks), each of which proposes “a practice-based view [...] to conceptualize how various types of spaces matter in *market creation and change*” (Castilhos *et al.* 2017, p. 9).

In short: (i) markets are “complex social systems, co-created, and focused on changing” (Marketing Theory 2017); (ii) materiality plays a decisive role in the institutional dynamics of market creation/change processes (Araujo *et al.*, 2010); (iii) these processes are due to the evolution of a place/landscape in terms of changing space/changing organization (Dale, Burrell 2008) and dynamics of markets through a spatial lens (Castilhos *et al.* 2017).

## **Empirical Context and Methods**

To develop a practice theoretically compatible account of material relations that helps conceptualise a spatial perspective to analyse market dynamics (Hui *et al.* 2017), the work takes the form of an interpretive case study and adopts a grounded theory approach (Glaser, Strauss 1967; Goulding 2002). Table 1: a) shows the materials used (on documentaries and videos as research sources: Belk 2011; Belk *et al.* 2018); b) in terms of analytical process, it describes the “dimensions of sociospatial relations” proposed by Jessop *et al.* (2008) and used by Castilhos *et al.* (2017) for the analysis of the spatial dimension of institutional market dynamics.

The empirical context and the design of the research take account of the suggestions of Askegaard and Linnet (2011) on the need for: “an epistemology [...] that explicitly connects the structuring of macro-social explanatory frameworks with

the phenomenology of lived experiences, thereby inscribing the micro-social context accounted for by the consumer in a larger socio-historical context based on the researcher's theoretical insights" (p. 381). The BBC documentary (table 1, *GARJ*, *BBC\_1*, *BBC\_2*, *BBC\_3*) retraces the current railway itineraries proposed by the famous *Appleton's General Guide*, which restores an interesting relationship with the context of this research. The story of the documentary passes through the time frame due to the birth and development of the North American railway network.

The opening of the Erie Canal (1825) allowed access to the Great Lakes; in 1869, the Union Pacific and the Central Pacific connected their respective routes in Utah, completing the first transcontinental railway line. Large structures<sup>2</sup> (bridges, tunnels, stations) were developed over the years. The extension of the railway lines was vertiginous (table 1, *GARJ*): between 1832 and 1839 it involved Louisiana, Virginia and Alabama, Florida, Michigan and Ohio, Georgia, Mississippi, Illinois and Indiana. Between 1840 and 1890, the United States increased from 4,500 to over 262,000 km of railway. Technologies imported from Europe or developed in America were rapidly translated into practice<sup>3</sup>. Finally, the documentary (table 1, *BBC\_1*, *BBC\_2*) reconstructs social and political aspects<sup>4</sup>, the events of the first financial scandals and the families of American capitalism (Vanderbilt, Gould, Rockefeller, Carnegie).

The spatial dimension of the *market creation/change* processes emerges from an interesting *heterotopia* (*à la* Foucault): (i) observing a place/landscape "under construction", in which alternative forms of social organisation are still possible and in which it is possible to question "our taken-for-granted notions about the ordering of space" (Chatzidakis *et al.*, 2012); (ii) historically reconstructing a particular process of infrastructure (the railway network) through a report (the 1879 guide) that methodologically restores "the ecological effect of studying boring things (infrastructure, in this case)" (Star 1999).

### **Findings: Infrastructure-Practice Dynamics and Railroad Tourism**

The levels of analysis proposed by Castilhos *et al.* (2017) emerge by combining the historical evolution of the North American railway network in terms of material infrastructure and the social processes that boost the institutional dynamics in the organisational space proposed by the tale of the *Appleton's Guide* (table 1, *BBC\_1*).

The level of *place* (table 1, A), is central in the establishment and negotiations of meanings, identities, exchanges, experiences, and intersubjectivities" (Castilhos *et al.* (2017, 13). The authors identify three social practices that feed the institutional dimension of the markets: *materialising*, through which "places, physically instantiate

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<sup>2</sup> 1871, Vanderbilt's Grand Central Depot station opens in NY; 1874, Eads Bridge opens in St Louis; 1875, Hoosac Tunnel opens; 1883, standard time adopted, and Brooklyn Bridge opens.

<sup>3</sup> 1829, the first locomotive to run in the US; 1830, the *Tom Thumb*, the first locomotive built in America; 1831, the first all-iron T-rails introduced in US; 1832, cowcatchers are added to locomotives; 1864, first steel rails used in US; 1865, Pullman's first coach in service; 1866, first refrigerated shipment of fruit carried to Chicago; 1870, new signals help improve safety.

<sup>4</sup> 1833, first two passengers to die in a train accident; 1861, US Civil War; 1864, Pacific Railroad Act; 1865, Lincoln assassinated; 1894, George Pullman's workers go on strike.

elements of market systems” (e.g., the *Granite Railway* was one of the first routes connected to the realisation of the Bunker Hill Monument in Boston); *framing*, “places frame market actors’ experiences” (e.g., the role of Charleston and the first cities between Pennsylvania and New Jersey in the production of locomotives), and the *bonding* in which “places are conducive to creation of bonds among market actors, objects, and between market actors and places” (e.g., the evolution of passenger services, the architecture of railway stations or city planning).

The concept of *territory* (table 1, B) is connected to the notions of “power relations, control, borders, and delimitations” (p. 16) and to the practices of *protection* (“territories protect specific groups of market actors”), *empowering* (“territories grant contingent power to territorial market actors”), and *constraining* (“territories enforce structures of acceptable behaviours and cognitions”). Several episodes highlight the territory dimension (table 1: *RT*, *GRR*, *IR*, *IW*; *BBC\_3*): companies like the South Carolina Canal & Railroad Company of Horatio Allen or the Baltimore & Ohio Railroad; the relations between Union Pacific and Central Pacific; the events at the turn of the Civil War (the *Great Locomotive Chase* episode; the *Pacific Railroad Act*).

*Scale* and *network* (table 1, C and D) are closely linked: in the first case, the spatial dynamics “highlight the relations between different levels ([vertical relations], e.g. local vs. global) that contribute to the formation of market elements and processes” (p. 18); in the second, “network highlights notions of horizontal interconnections among dispersed geographical entities, flows between these entities as well as the orchestration of an assemblage of places” (p. 19). The scale and network levels emerge from different events that the documentary associates with contents of the *Appleton’s Guide*. For example, the 1837 crises led to the entry of British capital. While the Credit Mobilier scandal (table 1, *GARJ\_126-181*; *BBC\_1*) was: (i) “an infamous episode in American railroad history, related these days to illustrate the worst excesses of the nation’s railroad mania”; (ii) as well as a collective awareness of the inescapable overlap between political and economic power.

The large connecting structures allow us to reinterpret the geography of the country, North-South (during the Civil War) and East-West (before and after Lincoln’s death): while the sabotage of the railway lines was a strategic aspect of the war (table 1, *RCW\_88-140*) on the one hand, *Gilded Age* (1870-1896) relied on bridges and tunnels for crossing large rivers and mountains (table 1, *IR\_159-180*: see *IW*, *GRR*, *RT*) on the other. In the UK, mobility and revolution in rail transport were the consequence of an industrial revolution; “in America, the railroad served to open up, for the first time, vast regions of previously unsettled wilderness” (table 1, *RJ\_98*), and it was the cause rather than the consequence of the emergence of a class of professionals and entrepreneurs, as well as of a larger working class involved in the industrialisation process (table 1, *GARJ\_184-223*). The mechanisms linked to the institutional dynamics of the markets embrace particularly distinctive themes from this perspective. On the one hand, the *imposing* and the *opposing* concern: “large-scale geographic representation of groups forging their particular definitions, structures, and elements of markets onto smaller-scale geographic ones”; and, on the other hand, “small-scaled geographic entities that can resist the structuring elements of larger-scaled entities, which leads to the creation and evolution of markets” (p. 18).

On the other hand, the *compromising* is linked to a rather important institutional dimension: “dissonance between scalar dimensions generates tensions that are negotiated by market actors”. Finally, in terms of “horizontal relations”, the social mechanisms identified by Castilhos *et al.* (2017, p. 14) are: the *mobilising*, for which “networks of places transport market elements across geographical space; *assembling*, through which “networks exercise certain capacities of geographical market elements differently”; *aligning*, that is to say, “alignment among geographical elements of a network solidifies (or weakens) a market”.

### **Discussion and Conclusion: Market dynamics – fields, artefacts, social practices**

This work has connected the concepts of space, materiality and institutional dynamics: a research program on the spatial dimension of market systems can have a natural development in destination marketing studies, while considering the destination as a *market creation/change* process. The paragraph suggests this possible path in terms of theoretical and operational implications.

*Material infrastructures & destination marketing.* By developing the role of material infrastructure in the institutional dynamics of a destination (a “changing” organisational field), interesting research problems emerge. Disseminated in theoretical perspectives due to research traditions consistent with this approach (Maclaran *et al.* 2009, Kravets *et al.* 2018), these points of view are often overlooked in the more traditional prospects of destination marketing (table 1, points 1-6: Nicolini *et al.* 2012): 1) the mobility of people is closely connected to moving objects, and “objects form an ecology of supporting objects”; 2) “objects become infrastructure when boundaries are uncontested and fall into the background”; 3) “objects are taken-for-granted, or ‘black-boxed’, and only become visible in case of breakdowns”; 4) the infrastructure point of view allows us to appreciate how “objects can resolve the tension between local practices within large-scale technologies by creating assemblages of objects”; 5) the concept of “novelty is backgrounded: the more objects become infrastructure, the more they are considered stable”; 6) lastly, “the historical context, politics and authorship are embedded and materialised in the shape of the infrastructure”.

*How to study destinations as “market systems”.* If the materiality of objects (in this case *material infrastructure*) plays a role in the institutional dynamics of a market and redefines the very nature of research problems, then the four levels of analysis of the spatial dimension of the market systems allow us to imagine the “research questions” in a different way when considering the institutional dynamics of a destination. From the figure Jessop *et al.* (2008: central part table 1) give us, each construct can emerge in three ways: “*in itself* as a product of bordering strategies (territory → territory); as a *structuring principle* (or causal mechanism) that impacts other fields of sociospatial relations (reading the matrix horizontally, hence: territory → place; territory → scale; territory → network); and as a *structured field*, produced in part through the impact of other sociospatial structuring principles on territorial dynamics (reading the matrix vertically, focusing on the territory column and considering linkages between: place → territory; scale → territory; and network →

territory)” (page 396). Castilhos *et al.* (2017, p. 23) re-elaborate the Jessop *et al.* (2008) framework and suggest possible combinations: 1) combining place & territory, for example, the object of the research could be addressed in terms of “role of places in territories and territorialization of places”, and the social practices at stake become *materialising, bonding, framing, protecting, empowering* and *constraining*; 2) or, combining place & scale, the object of study would then concern the “global vs. local and ‘Russian doll’ spatial division”, bringing into play the *imposing, opposing* and *compromising* mechanisms. Research questions could be expressed in these terms (for an evolution in marketing studies and consumer behaviour in these areas: Maclaran *et al.* 2009, Araujo *et al.* 2010, Kravets *et al.* 2018): “how can the materiality of places be used to stigmatise specific market practices?”; or “how are global brands imposing their definition of retail experiences in locales?”. For example, *community based tourism* would take on a different connotation by introducing the “materiality of places”; and phenomena like AirBnB or Uber could be framed critically if compared to the houses, streets, neighbourhoods, and shops that contribute towards connecting, thus spreading a *global consumption culture*.

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APPENDIX: Table 1 - Research materials, data coding, analytical process

code	data collected: primary & (selected) secondary materials				
<i>AGG_p.00</i>	<i>Appleton's General Guide to the United States and Canada</i> , 1879/2016, Simon & Schuster				
<i>GARJ_p.00</i>	<i>Great American Railroad Journeys. Historical Companion to the BBC Series</i> . 2017, London: Simon & Schuster				
<i>RT_p.00</i>	Albro M. (1992). <i>Railroads Triumphant. The Growth, Rejection, and Rebirth of a Vital American Force</i> . Oxford: OUP				
<i>SAR_p.00</i>	Fisher M. (1992). <i>The Story of American Railroad. 1825-1900</i> . HolidayHouse				
<i>TIT_p.00</i>	Herrera G.L. (2006). <i>Technology and International Transformation</i> . State University of NY Press				
<i>GRR_p.00</i>	Wolmar C. (2012). <i>The Great Railroad Revolution. The History of Trains in America</i> . NY: PublicAffairs				
<i>RCW_p.00</i>	Clark J.E. (2001). <i>Railroads in the Civil War. The Impact of Management on Victory and Defeat</i> . Louisiana University Press				
<i>IW_p.00</i>	Thomas W.G. (2011). <i>The Iron Way. Railroads, the Civil War, and the Making of Modern America</i> . Yale University Press				
<i>RJ_p.00</i>	Schivelbusch W. (2011). <i>The Railway Journey. The Industrialization of Time and Space in the Nineteenth Century</i> . UCP				
<i>IR_p.00</i>	Wolmar C. (2014). <i>The Iron Road. An Illustrated History of the Railroad</i> . DK Books				
<i>BBC_1 ep. #00</i>	Series 1 - <i>Great American Railroad Journeys</i> - BBC T <sup>W</sup> O, 15 Episodes, 2017 (from Manhattan to Jamestown)				
<i>BBC_2 ep. #00</i>	Series 2 - <i>Great American Railroad Journeys</i> - BBC T <sup>W</sup> O, 10 Episodes, 2017 (from St Louis to Memphis)				
<i>BBC_3 ep. #00</i>	Series 3 - <i>Great American Railroad Journeys</i> - BBC T <sup>W</sup> O, 20 Episodes, 2018 (from Boston to San Diego)				
Structuring principles (*)	Fields of operation/application (*)				Principle of sociospatial structuration
	Territory	Place	Scale	Networks	
Territory	Past, present, and emergent frontiers borders, boundaries	Distinct places in a given territory	Multilevel government	Interstate system, state alliances, multi-area government	Bordering, bounding, parcelization, enclosure
Place	Core-periphery, borderlands, empires, neomedievalism	Locales, milieux, cities, sites, regions, localities, globalities	Division of labor linked to differently scaled places	Local/urban governance, partnerships	Proximity, spacial embedding, areal differentiation
Scale	Scalar division of political power (unitary state, federal state, etc.	Scale as area rather than level (local thorough to global), spatial division of labor (Russian doll)	Vertical ontology based on nested or tangled hierarchies	Parallel power networks, non-governmental international regimes	Hierarchization, vertical differentiation
Networks	Origin-edge, ripple effects (radiation), stretching and folding, cross border region, interstate systems	Global city networks, polynucleated cities, intermeshed sites	Flat ontology, with multiple, ascalar entry points	Networks of networks, spaces of flows, rhizome	Interconnectivity, interdependence, transversal or "rhizomatic" differentiation
Material Infrastructures (**)	Place production/Organization of Space, and Market Dynamics (**)				
	A. Place	B. Territory	C. Scale	D. Network	
	(i) materializing (ii) framing (iii) bonding	(i) protecting (ii) empowering (iii) constraining	(i) imposing (ii) opposing (iii) compromising	(i) mobile-izing (ii) assembling (iii) aligning	
1. Affordances of objects in place production/organization of space	Everyday mundane objects support and shape place production/organization of space in their conjunction (they form an ecology of supporting objects)				
2. Disciplinary, professional, and cultural boundaries	Objects become infrastructure when boundaries are uncontested and fall into background				
3. Completeness of objects	Objects are taken-for-granted, "black-boxed", and only became visible in case of breakdowns				
4. Conflict	Objects can resolve the tension between local practices within large-scale technologies by creating assemblages of objects				
5. Novelty	Novelty is backgrounded: the more objects become infrastructure, the more they are considered stable				
6. Historical conditions	The historical context, politics, and authorship are embedded and materialized in the shape of the infrastructure				

(\*) Jessop et al. 2008; (\*\*) Castilhos et al. 2017 (from table 1, p. 14); Nicolini et al. 2012 (from table 1, p. 624)