

The Great Transit Mapping Debate

Transit maps are ubiquitous. Plastered on station walls, distributed as paper copies, or adorning touristy souvenirs, these maps reside in the public consciousness not only for their practical use, but also for their distinct graphic design. While transit maps frequently undergo minor revisions to account for changing routes and schedules, Harry Beck's schematic styling of the London Underground, a paradigm in transit design, has retained its iconic status and essential character since it was first published nearly eighty years ago. Beck's map, which closely resembled the circuit diagrams he worked with as an electrical draftsman, was radical at the time for its streamlined look and exclusion of geographical landmarks. Nonetheless, it was widely celebrated for its ability to reduce cartographic clutter and has been emulated in transit maps worldwide. New York City's current transit map is one curious exception to this design standard. New York used a schematic map designed by Massimo Vignelli for a brief period in the 1970s, but the map drew widespread criticism for its geographic distortions and was soon replaced by a more geographically accurate map. While New York is a small exception in the face of the ubiquity of Beck's stylistic hegemony, it is important because it sets the stage for a careful discussion of what factors make a transit map useful and accessible to different groups of people.

The Rise of the Schematic Transit Map

Harry Beck's diagrammatic map of the London Underground system would become a landmark work not only for its design principles but also for its iconic association with London. Despite its eventual fame and influence, the map had quite humble beginnings. It was designed by Harry Beck, an engineering draftsman who had been laid off from the signals office of the London Transport Corporation. He produced the first draft of the map in 1931. Though it was initially rejected for its drastic stylistic changes, it was eventually released to the public in 1933. The map, shown in figure 2, took visual cues from the circuit diagrams with which Beck worked. It was a radical departure from previous maps, such as the 1924 map in figure 1, that had become increasingly complicated with the addition of new



Figure 1: 1924 transit map of the London Underground, before Beck's schematic revision. J.C. Betts, *Map of the Electric Railways of London*, 1924. Available from: A History of the London Tube Maps, <http://sd2cx1.webring.org/l/rd?ring=londonundergoun1;id=5;url=http%3A%2F%2Fhomepage%2Entlworld%2Ecom%2Fcivebillson%2Ftube%2Ftube%2Ehtml> (accessed December 10, 2012).

lines and stations. Unsure of how the public would respond to the map, the Underground authorities agreed only to a trial release, insisting on including a note on the map that invited the public to send their comments to the Publicity Manager.¹ Despite this initial internal uncertainty, Beck's map proved extremely popular with the public. Beck continued to update and refine the map until 1960, when he had a falling out with the Underground's publicity manager and was ousted from the organization.²

Beck's map incorporated a number of novel design features. Prior to his work, transit maps had been laid out geographically: as in figure 1, subway lines were superimposed on a road map that included parks, waterways and notable landmarks. As the number of lines and

¹ "History and Influence: London Underground," October 19, 2011, Keen Graphics, accessed December 10, 2012,

² "A History of the London Tube Maps," accessed December 10, 2012,

<http://sd2cx1.webring.org/l/rd?ring=londonundergoun1;id=5;url=http%3A%2F%2Fhomepage%2Entlworld%2Ecom%2Fcivebillson%2Ftube%2Ftube%2Ehtml>

stations multiplied, this increased complexity of this type of map demanded a solution. Beck introduced his solution in the form of a schematic map that aimed to clarify and streamline the system. His map, based on circuit diagrams, severed the connection to geographic reality. Subway lines were straightened and only shown to run vertically, horizontally, or at a forty-five degree angle. Stations were shown to be evenly spaced, even if geography was distorted as a result. While previous maps could not contain the far reaches of each line, Beck's map showed the full extent of each line, neatly compressing the outer echelons of the city. The circles indicating stations were replaced with a tab, and transfers were now indicated by a diamond. The only geographical remnant was a highly stylized representation of the Thames River, which, while providing some geographical context, still conformed to Beck's style specifications.



Figure 2: Harry Beck's original schematic map. Harry Beck, *Map of London's Underground Railways*, 1933. Available from: A History of the London Tube Maps, <http://sd2cx1.webring.org/l/rd?ring=londonundergoun1;id=5;url=http%3A%2F%2Fhomepage%2Fentlworld%2Ecom%2Fclivebillson%2Ftube%2Ftube%2Ehtml> (accessed December 10, 2012).

The rationale behind Beck's map reflects his view of the purpose of transit maps and his conception of usefulness. Beck argued that because the trains ran underground, the physical location of the stations was irrelevant to users. "If you're going underground, why do you need bother about geography?" he asked.³ Instead, he thought users would only want to know how to get from station to station and where to change if needed: "*Connections*," he observed, "*are the thing.*"⁴ These design principles can be seen on his map, as he has excluded geographical landmarks and distorted the landscape in order to make connections and paths abundantly clear. Beck's transit priorities apparently resonated with the public, because users had "little difficulty understanding and using it," and there were more than 850,000 copies in circulation within two months of publishing.⁵ Beck's map, and its widespread acceptance, indicated that at least for the London public at the time, simplicity and connectivity were more desirable than geographic accuracy.

Beck's map is also emblematic and supportive of emergent twenty-first century notions of space and time. First, it is an exemplar of how technology and industrialism could collapse distances. Whereas in earlier maps, distant locations like Watford, Oxbridge and Wimbledon were indicated with arrows pointing off the map, the Beck map portrayed them as much more accessible and immediate by including them on the map. It is not just the industrial reality of trains, but also the psychological impression of the map that brings them closer. At the same time, by granting areas in the urban center proportionally more space, Beck's map exaggerates their importance. This effect was also in keeping with contemporary trends that considered suburbs to be under the urban "sphere of influence," and considered the city center to be the "hub of business, culture, and consumption."⁶

By presenting space-time as orderly, scientific and regimented, the map helped develop the very cultural notions that made it so successful. Beck's map allowed people to focus on getting from point to point instead of the individual characteristics of each place because it standardized the look, feel and spacing of stations. As Hadlaw explains, "the map's representational priority essentially shifted from the particularity of the *places* the Underground linked to the *idea* of the Underground as a *conduit* for the flow of trains and

³Janin Hadlaw, "The London Underground Map: Imagining Modern Time and Space," *Design Issues* 19.1 (2003): 25-35, accessed December 5, 2012, doi: 10.1162/074793603762667674

⁴ Hadlaw, "The London Underground Map," 32.

⁵ Hadlaw, "The London Underground Map," 31.

⁶ Hadlaw, "The London Underground Map," 34.

people.”⁷ The design choices of Beck’s map emphasized the importance of connections instead of destinations. Once the public had accepted such a notion, the map was the ideal tool for that sort of travel. Users didn’t need to parse complex graphic design or have a sophisticated geographic understanding in order to use the Underground; instead, they could turn to the clarity of Beck’s diagrammatic design. It contained all the information necessary for simply getting from point to point, which was, after all, the modern conception of travel that it conveniently supported.

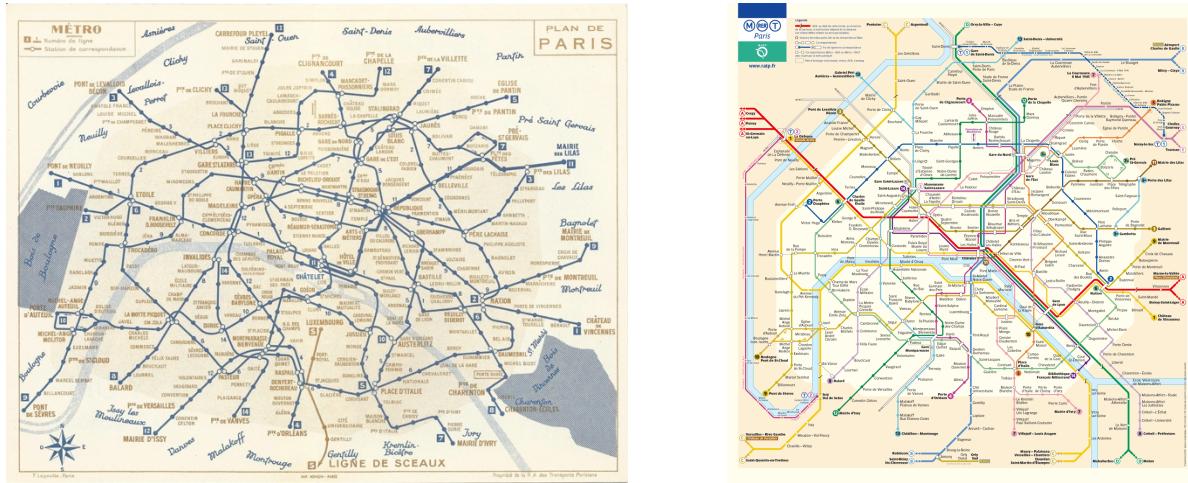


Figure 3: A 1956 non-schematic Paris Metro Map. RATP Plan Chemin de Fer Metropolitain de Paris, 1956. Available from: Flickr Commons, <http://www.flickr.com/photos/36844288@N00/6395957955/> (accessed December 10, 2012).

Figure 4: The modern-day Paris Metro Map. Paris Metro Map, 2012. Available from Paris Maps Central, http://parismap.metro-passes.com/map_paris.htm (accessed December 11, 2012).

Beck’s map was not only deemed useful and handsome within London, but was soon held up as a canonical example of graphic design for transit maps. Over the next fifty years, transit systems around the world would use Beck’s mapping style to reduce clutter and increase legibility. These principles were often used unconsciously, and without explicit attribution, simply because Beck’s map set the standard for such work. Simple observation of current maps compared with their non-schematic predecessors reveals how pervasive and powerful Beck’s design principles were. For example, between 1956 and 2012 (figures 3 and 4), the Paris Metro map adopted Beck’s system of straight lines that run at specified angles, a bright color palette, standardization of the distance between stations, and an abstraction of the contours and features of the land above ground. This mapping paradigm was not just

⁷ Hadlaw, “The London Underground Map,” 34.

limited to Europe, though, as demonstrated by metro maps from Singapore, Mexico City and Washington D.C. that also recall Beck's distinctive style (figures 5, 6 and 7).

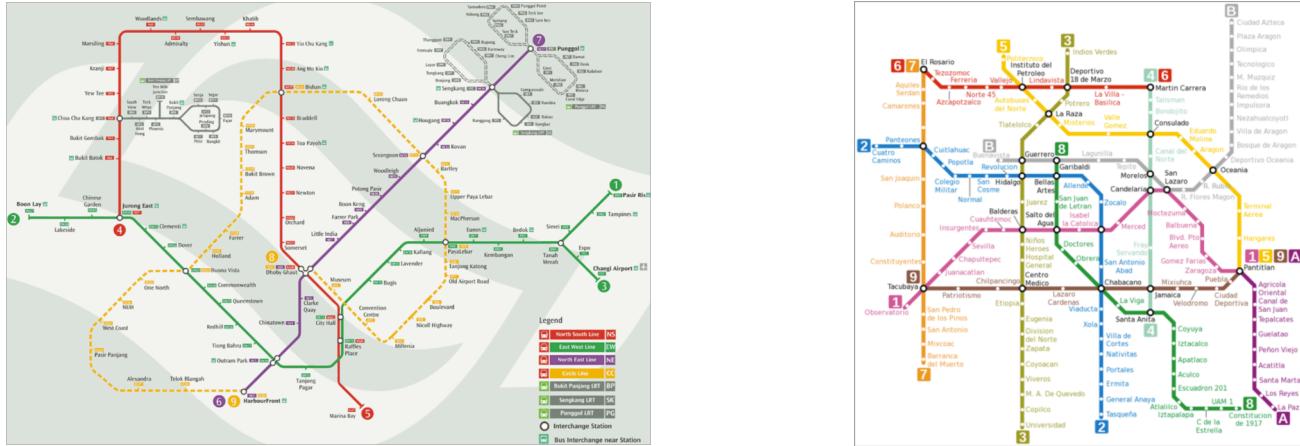


Figure 5: The current Singapore Metro Map. *Singapore MRT*, 2012. Available from <http://subway.umka.org/map-singapore.html> (accessed December 11, 2012).

Figure 6: The current Mexico City Metro Map. *Mexico DF*, 2012. Available from: Wikimedia Commons, <http://commons.wikimedia.org/wiki/File:MetroDF.jpg> (accessed December 11, 2012).

Figure 7: The current Washington D.C. Metro Map. *Metro System Map*, 2012, Available from Washington Metropolitan Area Transit Authority, http://www.wmata.com/rail/maps/print_map.cfm (accessed December 11, 2012).

New York City and the Geographic Transit Map

New York City is one notable exception to the otherwise dominant standard of Beck's schematic transit map style. Although New York's *current* subway map is more geographical than schematic, its long history is not devoid of a brush with such a sweeping trend. Indeed, New York published schematic subway maps in the Beck style starting in 1958 but most notably in 1972 through 1979 with the diagrammatic map designed by Massimo Vignelli, a Modernist Italian designer (figures 8 and 9). The Vignelli map was famously controversial, spawning decades of discussion that continue to this day. In particular, these controversies resulted in the exchange of the Vignelli map for a more geographically accurate map in 1979. This map is the predecessor of today's New York subway map, shown in figure 10. I would like to examine and discuss why the schematic style was so controversial and ultimately unsuccessful in New York.

Designers with the New York Metropolitan Transportation Authority (MTA) have a long and complicated history fraught with mapping difficulties. These challenges are due in large part to the complexity of the system itself. Before the MTA came into existence, the subway system was run by three competing organizations: the Brooklyn Rapid Transit Company (BRT, and later BMT, for Brooklyn-Manhattan Transit Corporation), the Interborough Rapid Transit Company (IRT), and the Independent Subway System (IND), which was opened in 1932 by the city as a public alternative to the other privately-owned options. Each of these companies produced their own subway maps, all of which were geographic maps that featured accurate representations of geographic distances and highlighted some physical landmarks. The city eventually purchased the two independent companies and consolidated the system, a change that is reflected in the (still geographic) maps of the 1940s.

Diagrammatic maps reflecting Beck's stylistic canon first began to appear in New York as part of a worldwide trend. The first schematic map to appear on the New York scene was George Salomon's 1958 system map, shown in figure 8. There is little record of the explicit reasons for the introduction of this new style, except that the MTA was constantly revising its maps, and as one MTA official explains, "schematic, or orthogonal, non-geographic maps

had become the standard for transit mapping systems” at this time.⁸ Salomon’s map, though it shared many design features with the Vignelli map that would succeed it twelve years later, curiously drew none of the intense criticism of its successor. After the establishment of the MTA in 1968, its chairman commissioned Massimo Vignelli to craft a map with an “even more modern look.”⁹ Thus the Vignelli map was introduced in 1972.

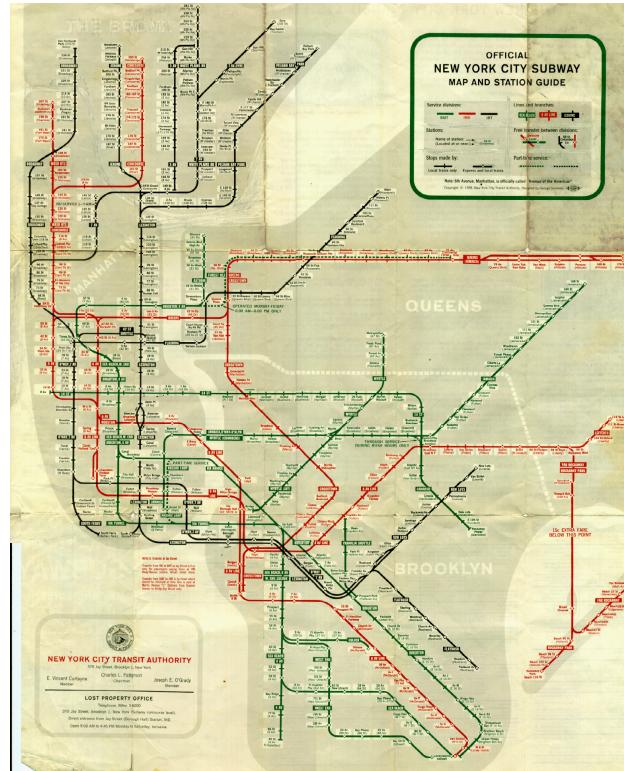


Figure 8: George Salomon’s 1958 schematic map of New York transit. George Salomon, *Official New York City Subway Map and Station Guide*, 1958. Available from: nycsubway.org/wiki/Historical_Maps (accessed December 10, 2012).

Vignelli’s map shared many design characteristics with the Beck map from nearly half a century earlier. Like the Beck map, lines on the Vignelli map only ran vertically, horizontally, or at forty-five degree angles. The map was essentially devoid of geographic information, except for subtle distinctions in color. Instead of using a realistic color palette, Vignelli colored the water beige, the parks grey, and the land white. The subway lines popped from the map, with ribbons of gemlike color streaking across the map. The boroughs themselves were geographically distorted, with borders, like the subway lines themselves, only running at

⁸ John Tauranac, “A Schematic or Geographic Subway Map?”, *The Gotham History Blotter*, accessed December 10, 2012, <http://www.gothamcenter.org/blotter/?p=249>.

⁹ Tauranac, “A Schematic or Geographic Subway Map?”

ninety or forty-five degree angles. Manhattan's size is heavily exaggerated, Brooklyn and Queens shrunk, and Staten Island apparently absent from the map. In echoing its design principles, the Vignelli map upheld the underlying logic of Beck's map: an emphasis on clarifying point-to-point connections, instead of the detailing the intricacies of each locale. As Vignelli himself said, “you want to go from Point A to Point B, period. The only thing you are interested in is the spaghetti.”¹⁰

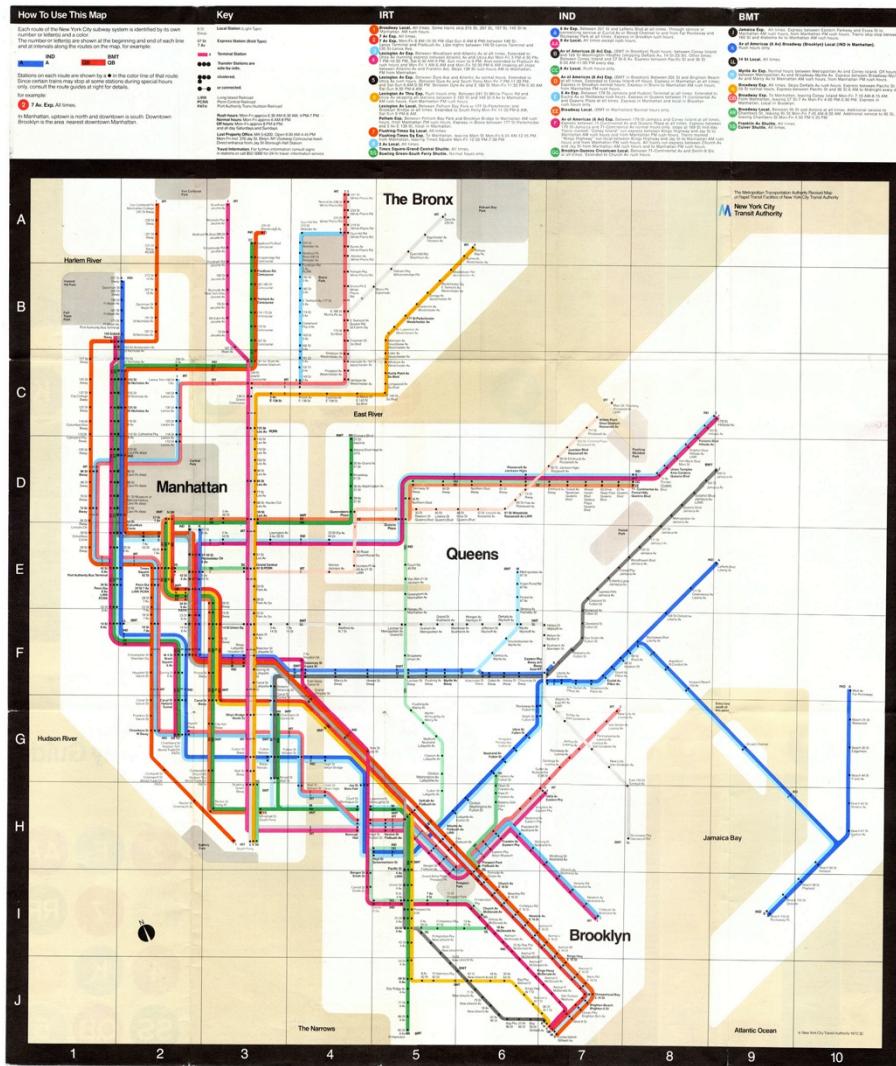


Figure 9: Massimo Vignelli's 1972 modernist schematic map of the New York City transit system. Massimo Vignelli, *New York City subway map*, 1972. Available from: [nycsubway.org, http://nycsubway.org/wiki/Historical_Maps](http://nycsubway.org/wiki/Historical_Maps) (accessed December 10, 2012).

¹⁰ Alex Mindlin, “Win, Lose, Draw: The Great Subway Map Wars,” *New York Times*, September 3, 2006, accessed December 10, 2012, http://www.nytimes.com/2006/09/03/nyregion/thecity/03maps.html?scp=20&sq=vignelli+map&st=nyt_r=0.

As history has shown, New Yorkers were in fact “interested in more than the spaghetti.”¹¹ Vignelli’s map has proven a controversial topic of debate from the time of its release through the present day. It drew compliments for its handsome aesthetic qualities, but sharp criticism for its lack of practicality. Hundreds of newspaper articles and op-eds have been written about the Vignelli map. Amateur map redesigns have been a frequent occurrence. In 1978, the MTA even hosted a public debate between Vignelli and John Tauranac, the chair of the design committee for the geographic subway map that would succeed Vignelli’s schematic one. In a way that may not have been possible or relevant at the time of the introduction of Beck’s map, Vignelli’s map set the stage for extensive discussion among varied socioeconomic groups about the contrasting merits and shortcomings of geographic versus schematic maps.

Although the Vignelli map was always celebrated for its design achievements, it ultimately proved pragmatically unsuitable for New York City, along with the schematic style it represented. Part of the trouble for Vignelli’s map comes from the fact that the New York subway system is substantially larger and more complex than other systems, making it harder to encapsulate so much information in *any* sort of map, geographic or schematic. Next, some of the stylistic liberties that Vignelli took seemed to strike a discordant note for many New Yorkers, who rejected the color palette and the distorted boroughs. Finally, the orderly gridded layout of New York’s street proved a tough competitor to Vignelli’s abstractions, because the representations on the map did not match New Yorker’s more realistic psychological conception of the city. I would now like to examine in detail the difficulties presented by these factors.

The unusual complexity of the New York subway system is a challenge that all of its transit designers have grappled with. The system bears the weight of the history of the three independent train companies that came together to form the MTA. Many routes duplicate each other or overlap in complicated or unpredictable ways. Residual naming conventions add to the complexity: “the IND, the Eighth Avenue Express and the A train...are all the same thing, depending on what sign you read and who is doing the talking.”¹² The system also differs by night and day. Tauranac explains the situation:

¹¹ Mindlin, “Win, Lose, Draw: The Great Subway Map Wars.”

¹² Paul Goldberger, “At Last, A Usable Subway Map,” *New York Times*, August 2, 1979, accessed December 10, 2012, <http://query.nytimes.com/mem/archive/pdf?res=9503E3DB153EE732A25751C0A96E9C946890D6CF>.

New York has difficulties that other cities do not. For instance, there are four hundred and fifty-eight stations, and these include underground, elevated, and surface. Other cities do not have local and express stops, and their routes are for the most part self-contained. They do not have the kind of duplications and differences depending on, say the time of day that New York has.¹³

While these complexities would plague any transit map designer, Vignelli's experience has shown that they mesh particularly poorly with the streamlined nature of his map. Vignelli himself states that, “you can't get all the information onto a single map, and you shouldn't try.”¹⁴ In the case of New York, Vignelli's focus on connections backfired, because using the New York system relies on so much more than connections. There is ample metadata required for successfully navigating the intricacies of local and express lines, day and night schedules, and various transfer protocols. While Vignelli's map does contain this information, it surfaces it in a way that is more difficult to grasp. For example, in order to follow the path of an express train, one must remember the association between the train's name (a letter or a number), the color of the line, *and* the destination of interest. In the current map, more cluttered but in this regard simpler, one need only find the station of interest and see which lines stop there. The complexities of the New York system in conjunction with the Vignelli map demand much more of users than a simpler system would.

While the complexity of New York's subways is an inherent feature of the city, Vignelli was also criticized specifically for his stylistic mapping choices. Much of the widespread backlash had to do with Vignelli's radical simplifications: “many New Yorkers were outraged by what they saw as the misrepresentation of their city.”¹⁵ The public was generally dissatisfied with the bland and unrealistic color palette he chose for the land, parks and water. There was also dissatisfaction with the obvious geometric distortion of the boroughs and specific landmarks. Central Park's portrayal as a gray square (when it is a green rectangle) is an oft-cited point of contention. It is interesting to note that unlike Beck, “Mr. Vignelli...included some geographical references, by identifying Central Park and areas like

¹³ “Going Places,” *New Yorker*, July 24, 1978, accessed December 10, 2012, <http://archives.newyorker.com/?i=1978-07-24#folio=018>.

¹⁴ “Going Places.”

¹⁵ Alice Rawsthorn, “The Subway Map That Rattled New Yorkers,” *New York Times*, August 5, 2012, accessed December 10, 2012, <http://www.nytimes.com/2012/08/06/arts/design/the-subway-map-that-rattled-new-yorkers.html?scp=10&sq=vignelli+map&st=nyt>.

Manhattan and the Bronx.”¹⁶ Perhaps, by giving some geographic identifiers, Vignelli raised the expectation for geographic accuracy in a way that Beck did not. Additionally, because of New York’s well-known grid system, these inaccuracies were more obvious and likely seemed more egregious than they would have in a city with less precise geography.

The most problematic aspect of the Vignelli map was the way it challenged New Yorkers’ unique mental relationship with the geography of their city. Because of the alphanumeric grid system of New York streets, New Yorkers had a specific mental idea of the space-time relationship between two points in the city based on their coordinates on the grid. This feature was specific to New York; in cities with non-orthogonal street systems, the cognitive link between locations was less precise. Michael Bierut, a New York-based graphic designer, elaborates:

Vignelli's...logical system came into conflict with another, equally logical system: the 1811 Commissioners' Plan for Manhattan. In London, Henry Beck's rigorous map brought conceptual clarity to a senseless tangle of streets and neighborhoods that had no underlying order. In New York, however, the orthogonal grid introduced by the Commissioners' Plan set out its own ordered system of streets and avenues that has become second nature to New Yorkers. Londoners may be vague about the physical relationship of the Kennington station to the Vauxhall station: on the London underground map, Vauxhall is positioned to the northwest of Kennington when it's actually to the *southwest*, and it doesn't seem to bother anyone. On the other hand, because of the simplicity of the Manhattan street grid, every New Yorker knows that the 28th Street number 6 train stops exactly six blocks south and four blocks east of Penn Station. As a result, the geographical liberties that Vignelli took with the streets of New York were immediately noticeable, and commuters without a taste for graphic poetry cried foul.¹⁷

Because of their acute awareness of the geometry of the city, New Yorkers were less tolerant of the distortions of Vignelli's maps. Inaccuracies – like indicating that one could traverse Central Park in a thirty-minute stroll, or showing the 50th Street Broadway station far to the West of its actual location – were detected quickly, and diminished faith in the usefulness and correctness of the Vignelli map.¹⁸ The widespread dissatisfaction with

¹⁶ Alice Rawsthorn, “The Subway Map That Rattled New Yorkers.”

¹⁷ Michael Bierut, “Mr. Vignelli's Map,” *Observatory*, October 28, 2004, accessed December 10, 2012, <http://observatory.designobserver.com/entry.html?entry=2647>.

¹⁸ Alice Rawsthorn, “The Subway Map That Rattled New Yorkers.”

Vignelli's representation of New York, dissatisfaction specific to the unique geometric quality of the city's layout, eventually pressured MTA officials into swapping the schematic map for a geometric one.



Figure 10: The current NYC subway map, which takes cues from Tauranac's 1979 geographical map. *New York City Subway with railroad connections*, 2010. Available from: nycsubway.org/wiki/Historical_Maps (accessed December 10, 2012).

Finally, the Vignelli map forced designers and users alike to grapple with the concept of usefulness in transit maps. Although Vignelli placed himself firmly in the Beck school with his faith in the prevalence of connections, users constantly complained about the fact that his map was severed from the reality aboveground. A 1970s commenter noted that, “the present map is a schematic plan of the underground...so you never really know where you

are. People want to go to places, not to subway stations.”¹⁹ Another article complained that “the sole purpose [of the map], it would seem, has been to deny the public any sense of information about where they are going.”²⁰ A comment on an opinion piece suggests that people like to use the subway map as a street map in order to connect their foot transit and subway travels; this dual functionality is only possible with a geographic map.²¹ In the minds of these on-the-ground New York users, a useful map is one that is connected to geography, not severed from it. This belief fundamentally differed from Vignelli’s conception of usefulness.

All of these factors contributed to the MTA’s decision to retire Vignelli’s controversial map in favor of a new one. The current map is a direct descendant of the 1979 map and is shown in figure 10. A design committee, headed by Tauranac, began work on the new map in 1976. It was tested in 1978, published in 1979, and exists to this day with some minor modifications. The new map was generally well received, especially because it corrected the geographic distortions of Vignelli’s map that had so vexed its users. Central Park is green and rectangular, New York’s waterways are blue, and the map portrays some of the city’s major thoroughfares to aid aboveground way finding. Although it did not have the iconic aesthetic elegance of Vignelli’s piece, pundits and public alike celebrated the usability they considered the paramount feature of a transit map: “it is not the object worthy of framing that Mr. Vignelli’s map was, but it is a handsome map nonetheless...It is most certainly the clearest and most usable map the subway system has had in years...[and] it is likely to provide the best combination of information and good looks that we can expect.”²²

A Dialogue on Transit Map Usability

Transit maps occupy a distinctive role. While they are often published and propagated by an official municipal authority, they are intended for on-the-ground public usage. Because of this system, there is ongoing deliberation about what design features truly make transit maps

¹⁹ “Going Places.”

²⁰ Paul Goldberger, “Design Notebook,” *New York Times*, February 9, 1978, accessed December 10, 2012, <http://query.nytimes.com/mem/archive/pdf?res=9905E2DD1430E632A2575AC0A9649C946990D6CF>.

²¹ mikros, May 1, 2008, comment on Tina Kelley, “Such Hubbub Over a Subway Map. Decades Later, Revisions.” *New York Times*, May 1, 2008, <http://cityroom.blogs.nytimes.com/2008/05/01/such-hubbub-over-a-subway-map-36-years-later-revisions/?scp=5&sq=vignelli+map&st=nyt>.

²² Paul Goldberger, “At Last, A Usable Subway Map.”

worthwhile and accessible to a broad spectrum of the population. As part of that discussion, several individuals have developed hybrid maps that seek to cull the best elements from either style and combine them in an optimal way. The London Tubemap, created by designer Mark Noad and seen in figure 11, is one notable example that preserves Beck's color palette and lack of geographical features, but tries to minimize geometric distortion.²³ In New York City, Eddie Jabbour's KICKMap has garnered attention for its hybrid mix of the current MTA's geographical grid and Vignelli's broad ribbons of color.²⁴ A comparison between the three maps can be seen in figure 12. While neither has been officially adopted by the cities' respective transit organizations, they do encourage citizens to engage in a dialogue about the desired design qualities of a transit map, and call upon the public to use their purchasing power in determining what features are eventually included in official maps.



Figure 11: London-tubemap, an effort by Mark Noad to ease the distortions of Beck's schematic map. Mark Noad, *London Tubemap*, 2011. Available from: <http://london-tubemap.com/index.php> (accessed December 10, 2012).

Beck's diagrammatic map of the London Underground and the MTA's geographical map of the New York City subway anchor either end of the mapping spectrum, making the discussion and creation of these hybrid maps possible. Harry Beck's 1933 London Underground map set the standard for schematic maps by placing lines exclusively at forty-five and ninety degree angles, using a bright color palette, standardizing the distance between stations, and divorcing the map from aboveground geographical features. Its clean look reduced clutter and brought a much-celebrated clarity to the London Underground. Not

²³ Mark Noad, "London Tubemap," September 2011, accessed December 10, 2012, <http://london-tubemap.com/index.php>.

²⁴ Eddie Jabbour, "KICKMap.com," accessed December 10, 2012, <http://www.kickmap.com/about.html>.

only are its main design principles still in place in the current London map, but they are also held up as a paradigmatic example of the schematic transit map, and emulated worldwide in the maps of most major systems. New York's experience with schematic maps was an exception to the rule; Vignelli's diagrammatic design received widespread criticism and was eventually replaced by a more geographically grounded map, distinguishing New York as the only major transit system without a schematic map.



Figure 12: A comparison from left to right of the current MTA map, the Kick Map, and Vignelli's map. Eddie Jabbour, KICKMap, 2007. Available from: <http://www.kickmap.com/index.php> (accessed December 10, 2012).

In the cities I have examined, the preference for schematic versus geographic maps hinges on a fundamental disagreement about what makes a transit map useful and easily accessible to its users. While Beck and Vignelli argued that clarifying point-to-point connections is the most important function of the transit map, the Tauranac committee believed that “the relationship of the subway lines to the city above them is crucial.”²⁵ In both cases, the geometry of the city streets and the way residents related to that geometry played an important role in determining which side the respective cities aligned themselves with. Londoners were pleased with the way Beck's map consolidated and organized their jumble of non-orthogonal streets. New Yorkers, on the other hand, were dissatisfied with Vignelli's distortion of their orderly gridded street system. The delicate interplay between official opinion, graphic design trends, notions of usefulness, and the public's mental relationship with the city will no doubt drive the dialogue of revision as transit maps continue to help users navigate their cities.

²⁵ Paul Goldberger, “At Last, A Usable Subway Map,”