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Mapping Ideas in the Fortress-Cities of Civitates orbis terrarum

The third volume of *Civitates orbis terrarum*, first published in 1581, includes a group of eight towns spread across four pages, with each town depicted in steep bird's-eye perspective.ⁱ The eight towns are Avesnes, Beaumont, Charlemont, Chimay, Landrecies, Mariembourg, Philippeville, and Walcourt (figures 1 and 2). With the exception of Avesnes, all eight are within one hundred kilometers of each another along what was then the border between France and the Holy Roman Empire. Five of these towns feature bastioned trace fortifications, which were developed in the sixteenth century in response to artillery warfare and are characterized by angled walls and arrowhead-shaped bastions. Three of these towns – Mariembourg, Philippeville, and Charlemont – were purpose-built as fortress-cities in the sixteenth century by Imperial engineers and named after Habsburg rulers (Martens 2019b, 25-48).ⁱⁱ Given their proximity and the geographical organization of the atlas, it makes sense that these towns are grouped conspicuously together, except that geographic coherence is not an inevitable consequence of proximity nor is proximity an inevitable consequence of linear distance. This grouping, rather, reflects a process, one inherent to the map as a genre, of imagining and prioritizing relationships in the human world and developing from those relationships a persuasive narrative (Harley

and Woodward 1987, xvi; Gillies 1994, 54; Gordon and Klein 2001, 3). In this case, the grouping of the towns reinforces a relationship between them already established in discourse, one in which the bastioned trace plays a crucial role. *Civitates orbis terrarum* creates a visual narrative of this relationship by adapting its source material in order to emphasize the bastioned trace fortification systems represented in the group. The process by which these maps isolate and display the sophisticated geometry of the bastioned trace sheds light on the larger process by which new fortification technology was translated into popular print as a visual entertainment.

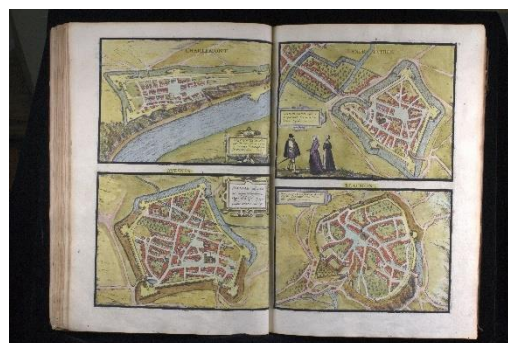


Figure 1
from *Civitates orbis terrarum* (1581).
Courtesy of Queens' College Library.

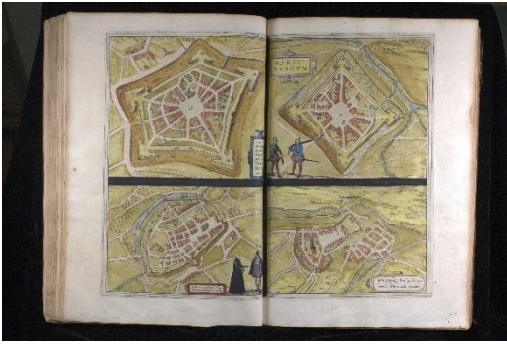


Figure 2
from *Civitates orbis terrarum* (1581).
Courtesy of Queens' College Library.

Before going forward, it is necessary to say that while this essay is concerned with the bastioned trace, it is written from the perspective not of an architectural or military historian but of a literary scholar interested in the bastioned trace as an important element of early modern textual and visual culture. This essay would not have been possible without the archival heavy-lifting of Pieter Martens, Martha Pollak, Mary Henninger-Voss, Marion Hilliges, Morgan Ng, and so many other architectural historians who have reintroduced the world to the bastioned trace in the twenty-first century. It will very often draw on their expertise, but it does not attempt to duplicate their efforts or develop their methodologies. Its objective is not to reinterpret the form, function, or history of fortifications or to reconsider how any given fortification might have cooperated with other infrastructure in what Fernando Cobos-Guerra has called a “territorial system” (2015). Its goal is, instead, to examine how images of these objects work as elements of narrative in a world of books. For this reason, it will avoid specialized military and architectural terminology – and specialized literary critical terminology – to the greatest extent possible.

The exciting thing, from the perspective of a literary scholar, is that the bastioned trace is part of the real world of early modern Europe and a character in a book. The bastioned trace fortification systems were real structures, and images of them were available to connoisseurs through loose prints, to a coterie of professional architects and scholars through manuscripts, and to state and military decisionmakers through three-dimensional models. The scale of the distribution of these representations expanded exponentially, however, through popular cartography and through *Civitates orbis terrarum* specifically, which was published in six volumes and dozens of editions in three languages for over forty years. *Civitates orbis terrarum* also regularized popular experience with the bastioned trace in that suddenly a whole lot of people were looking at the same handful of images through the same medium. So while bastioned trace fortifications can and should be approached as structures designed by architects, built by princes, and placed within territorial systems, they also need to be approached as “paper cities,” to borrow Annalisa Dameri’s useful phrase, created by engravers, arranged by printers, and sold as entertainment to the book-buying public (2016, 271-93). What is more, they were paper cities within the emerging genre of popular cartography, whose conventions were not yet fixed and that straddled a developing but inconsistent divide between the map as a special kind of image characterized by objectivity and scientific accuracy and the map as another kind of artwork that would have been expected to delight as well as teach (Maier 2012, 712-13). “Like texts and like paintings,” as Basile Baudez has recently argued, “maps were made to convey information, but equally intended to please and to convince” (2021, 54).

How the bastioned trace worked within an emerging genre, how it helped to shape that genre, and how it was itself shaped within visual culture through that genre are the bigger questions informing this essay. The hope is that some of these questions can be answered by reading outward from the group of eight cities in the third volume of *Civitates orbis terrarum*.

Why Georg Braun, Frans Hogenberg, and Simon van de Neuvel, the brain trust behind *Civitates orbis terrarum*, decided to publish the group of eight cities as a group of eight cities is not precisely known. In general, the editorial team added maps to subsequent volumes of *Civitates orbis terrarum* as they became available and categorized them geographically – not infrequently with multiple maps on the same page, so a simple answer is that these towns are all in the same region, the editors acquired them between the publication of the second and third volumes, and they grouped them in a way that is not all that unusual for the atlas (Van der Krogt 2008). But the geographical relationship mapped in the grouping reflects a process of rationalizing the border country between France and the Holy Roman Empire as a coherent place, one that has precedents in discourse and that revolves in discrete but cooperating ways around the bastioned trace.

Each city view in the group has been attributed to Jacob van Deventer, an accomplished Mechlin cartographer who was commissioned by Philip II to map every town in the Low Countries between 1558 and 1572 (Fussel 2008; Vollen-Bronck 2009, 2; Dupont 2020, 17-18; Kagan 1986). The survey was undertaken probably for administrative purposes, although its objectives could have been

more specifically military. Either way, the survey was intended to facilitate Imperial governance of the Low Countries, and van Deventer's maps were drawn methodically in order to provide accurate information about the fortifications of individual towns as well as their immediate surroundings. While van Deventer's works have recently been compiled and re-examined by Reinout Rutte and Bram Vannieuwenhuyze, the precise mechanism by which maps drawn for this government commission found their way into *Civitates orbis terrarum* is unclear (Rutte and Vannieuwenhuyze, 2018; Vannieuwenhuyze 2019, 4-13; Dupont 2021). Van Deventer was in dispute with Spanish officials over payment at the time he fled Mechlin for Cologne when, ironically, the forces of the prince who employed him sacked the city in 1572. In Cologne, he may have reconnected with Frans Hogenberg, who was also originally from Mechlin and the principal engraver for *Civitates orbis terrarum*. Hogenberg, presumably, incorporated many of the images into the ongoing atlas project after van Deventer's death in 1575 (Deys 1989). Whether these maps leaked into popular print or had simply lost their proprietary or strategic value by the late 1570s – and what role van Deventer might have played in bringing them to press – await the discovery of new evidence. Hogenberg had previously been in trouble with the Imperial administration for printing “visual reports” of Protestant uprisings in the Low Countries and likely had few compunctions about incorporating high-quality materials into a lucrative book project (Voges 2021, 303-4).

The maps as they appear in *Civitates orbis terrarum* are not exactly van Deventer's maps, however. They retain some but not all of the features that would have made

them most valuable to Imperial officials. Unfortunately, only two thirds of the maps van Deventer created for this survey survive, and any maps he might have drawn of Charlemont and Philippeville are not among them. Yet, much can be gleaned from comparing van Deventer's extant maps with their counterparts in the group of eight. It is clear from a glance that the maps in *Civitates orbis terrarum* use the scale of van Deventer's miniature versions with regard to the size of the town relative to the size of the map. It is generally supposed that the miniatures are cartoons and a vestige of van Deventer's drafting technique. With such an onerous task to perform, he worked methodically and efficiently to capture the most critical information about the town in the miniature before transferring the miniature image to the finished map and framing off the miniature as a separate map (Deys 1989; Vollen-Bronck 2009). These miniatures eliminate most interior and exterior detail other than the outline of the walls and the routes of major streets, which are roughed in as dotted lines.

Because the versions of the towns that appear in *Civitates orbis terrarum* retain the proportions of van Deventer's miniatures, they also exclude most of the information about the towns' physical and social situations available in van Deventer's finished maps (Dupont 2021, 16). The *Civitates orbis terrarum* maps also embellish the wall systems by adding a subtle three-dimensionality and by covering open spaces around the outline of the wall systems with decorations. The map of Avesnes in *Civitates orbis terrarum*, for example, eliminates the suburbs included in van Deventer's miniature (figure 3), and the resulting empty space is covered by a cartouche. In the case of Landrecies (figure 4), the vast green space of the Sambre

valley partially visible in van Deventer's miniature is filled in with a cartouche and fanciful images of people in local dress of the sort that can be found in the corners of pages throughout the atlas. In both cases, the isolation of the cities and the elimination of other geographic information calls attention to the impressive bastioned trace systems installed by Imperial engineers after 1530 (Salamagne 2011). Mariembourg, one of the three fortress-cities in the group of eight, is inflated so that its dazzling new bastions dominate the frame, eliminating most of the landscape visible in van Deventer's image (figure 5) but also simplifying considerably the network of roads leading into it. Unfortunately, van Deventer's map of Mariembourg in the Royal Library of Belgium is the only one known to exist, and it does not include a miniature for comparison. Since van Deventer was precise about roads and other administratively crucial information, it is likely that the road system was simplified in the translation of the survey map into *Civitates orbis terrarum*. This image of Mariembourg complements the image of Philippeville on the facing page, in which the earthworks mirroring the arrow-head bastions are almost touching the frame of the map in three places. Van Deventer's map of Philippeville is lost, so it cannot be known if and, if so, how the *Civitates orbis terrarum* image modifies its source. What is evident from the arrangement of the maps on these two facing pages, however, is that the new fortifications of Philippeville and Mariembourg are showpieces whose notable bastions are almost bursting out of their frames and crowding out distracting information. Their spectacular appearance is emphasized by the images of Chimay and Walcourt directly below them, which are depicted from a higher vantage that makes them and their

older wall systems a smaller part of a larger countryside.

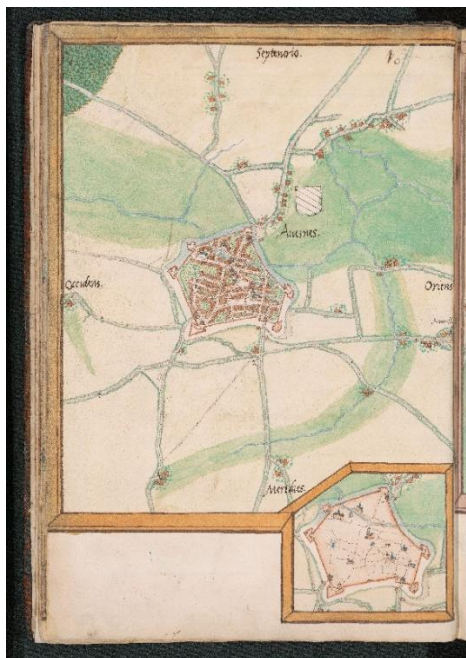


Figure 3
Avesnes by Jacob van Deventer (c. 1558-1572). Courtesy of the Biblioteca Nacional de España.

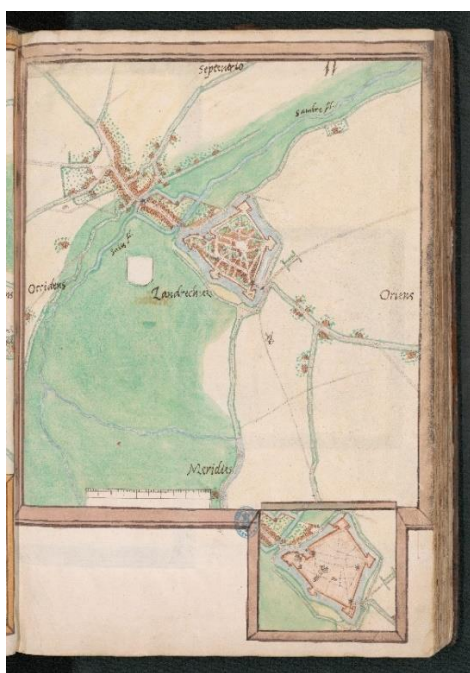


Figure 4
Landrecies by Jacob van Deventer (c. 1558-1572). Courtesy of the Biblioteca Nacional de España.



Figure 5
Mariembourg by Jacob van Deventer (c. 1558-1572). Courtesy of the Koninklijke Bibliotheek van België.

This group of eight towns also forms a visual narrative that complements a verbal narrative with which many readers of *Civitates orbis terrarum* would have been familiar. The territorial system created through these towns by the work of Imperial engineers was celebrated enough to earn Sebastian van Noyen, the designer of Philippeville and Charlemont, honorable mention from Giorgio Vasari in his *Lives of the Artists* (Vasari 1568; Martens 2019b). Six of the eight towns were also previously grouped together by Lodovico Guicciardini in *Descrittione di tutta I Paesi Bassi* published in 1567 (264-265). In Guicciardini's atlas, the towns are listed on facing pages, as they are in *Civitates orbis terrarum*, with bold subheadings for each town (1567). Guicciardini does not include pictures of the towns, but he discusses their defensive posture in the border country and remarks on the fortifications of Mariembourg in especially evocative terms, referring to its four “*belissimi*

buluardi? (1567, 264–65). *Civitates orbis terrarum* also tells the story of this relationship in verbal form, discussing Charlemont, Mariembourg, and Philippeville among the “strong defenses raised by the Emperor Charles V against the invasions of the French” (COT 1581, 23).ⁱⁱⁱ *Civitates orbis terrarum* gives its readers an opportunity not only to see the *belissimi* bulwarks described by Guicciardini but to see them in terms of a narrative about a region that had already formed *as* a narrative of fortifications.

It may have been through a series of happy accidents that van Deventer’s survey maps came into Hogenberg’s hands in the 1570s, but the arrangement of the group of eight towns and the composition of its constituent maps in the 1581 volume reflects a process of translating administrative or military maps into a visual narrative that developed from existing verbal narratives and that is organized visually around the bastioned trace. The versions of van Deventer’s maps that enter *Civitates orbis terrarum* add emphasis to the wall systems and to the purpose-built wall systems of Mariembourg and Philippeville especially. Other information is crowded out or covered over with ornamentation, making isolated wall systems the most prominent feature of the real world represented by each map. That isolation is then replaced through the grouping of the maps with an imaginary coherence supplied by the idea of a territorial system that had itself been established in narrative, which the images of the fortification systems also affirm. The fortifications are not merely a part of the story but the part that holds the story together.

Why the bastioned trace was effective in this narrative role comes perilously close to the old question of how the bastioned

trace was aesthetically pleasing. This question was explored by Paolo Marconi in “La cittadella come microcosmo” (1968) and “La città come forma simbolica” (1973) as well as by J. R. Hale in *Renaissance Fortifications: Art or Engineering?* (1977), but it has not been revived much in the groundswell of scholarly interest in the new fortifications the twenty-first century has witnessed. That said, city walls had always been practical defensive apparatuses, and yet, they had always held significance beyond their practical functions. They protected cities, and they embodied and communicated the strength and wealth of cities – and that did not change suddenly with the introduction of the bastioned trace at the turn of the sixteenth century (Pepper 2000; Brett 2011, 7). What did change, however, was the design of city walls, the accuracy of representations of them, and the scale on which print enabled the distribution of these representations. The question of how these images of new fortifications signify or communicate or please is different from the question of how fortifications signify or communicate or please. The question, then, of why images of new fortifications as paper cities were interesting enough to command two-page spreads in a major commercial undertaking like *Civitates orbis terrarum* would seem to be important, and it is one that, happily, can be approached through recent developments in architectural history.

The bastioned trace was informed by a self-conscious “mathematical expertise,” which was embraced by military architects of the sixteenth century as a way to define themselves against their civil counterparts (Henninger-Voss 2002, 377). Stephan Hoppe and Marion Hilliges have suggested, however, that this commitment to geometric precision in sixteenth-

century military architecture may have run ahead of its proven benefits in defensive warfare (Hoppe 2012, 100; Hilliges 2011). Indeed, the emergence of a robust literature on the specialized mathematical knowledge required of fortification design lent itself to diletantism and fed a “courtly culture engaged in the theoretical study of the military arts,” as Morgan Ng has explored in his recent essay on the fortification designs of Francesco De Marchi (2016, 404). This diletantism could extend to the highest strata of society, as Dirk Jacob Jansen has recently argued in his analysis of the star-shaped hunting lodge designed by Archduke Ferdinand (2019, 252). That Iago, in Shakespeare’s *Othello* (1608), can discredit Michael Casio’s military expertise by calling him an “arithmetician” full of “bookish theoretic” suggests that the jargon of military geometry was well-established as part of an affectation of military expertise by the early seventeenth century (Shakespeare 2016, 1.1.18-23).

There can be no doubt, however, that artillery warfare required (and still requires) mathematical expertise, nor can there be any doubt that the mathematical expertise behind the new fortification systems contributed to their effectiveness in defending territory for the better part of four centuries (Parker 1996, 63-172). The issue, rather, is that “[m]ilitary engineers had one oar in cartographic methods, which promised to reduce to scale exactly physical landscapes and standing walls, and another in the geometric methods, which allowed the design of “perfect” forms of desired proportionalities,” as Mary Henninger-Voss has argued (2004, 155-56). Effective military architecture required the cooperation of both of these skills, which are not coterminous even while they may overlap. The way these

two oars pull with and against each other is reflected, for example, in Allain Manesson-Mallet’s recommendation of regular or symmetrical wall systems instead of irregular or asymmetrical ones unless the terrain makes the former untenable (1671, 4-5).^{iv} From the perspective of either a gunner or a cannonball, symmetry does not matter much, but for Manesson-Mallet, clearly, it is an ideal of design that exerts pressure on what should ostensibly be a very practical matter. But the opposite is also true. Very practical matters of terrain that military architects were trained to map precisely exert pressure on ideals of design. The new fortifications were, thus, highly practical mechanisms designed to function within a territorial system, but they were also expressions of a process of overcoming the challenges of terrain through the innovative application of mathematical ideals or, conversely, of realizing the highest ideals of mathematical precision within the constraints of the environment.

They were also expressions, as Paul Hirst has argued, as “of prevailing ideas of how to rationalize space” (1997, 13-15). The new fortifications worked as fortifications because they provided an economical and effective solution to the problem of artillery, as Geoffrey Parker and others have argued, but they also made sense as solutions to the problems of artillery because they cooperated with other ideas about how to organize as well as defend the places people lived (Parker 1996, 63-172). It is not by coincidence that early modern utopian literature grew up alongside the bastioned trace or that early modern utopianism and bastioned trace architecture sometimes converge. Zamosc, founded by Jan Zamoyski, Grand Chancellor of Poland, and designed as an ideal city by Bernardo Morando in 1580,

is among the more notable images of the bastioned trace in the sixth and final volume of *Civitates orbis terrarum*. Not depicted in *Civitates orbis terrarum* but more telling is Freudenstadt. Envisioned by Duke Friedrich I of Württemberg as a Protestant refuge, it was designed in 1599 by Heinrich Schickhardt, an associate of fellow Swabian Johann Valentin Andrea, who included a fortress-city much like Freudenstadt in his utopian work *Christiapolis* (1619) (Lewis 2016, 71). Whether there was as much art as engineering at work in the bastioned trace may be a distracting question, but a constructive approach to a similar set of issues is to see the bastioned trace, as Martha Pollak has suggested, as synthesizing a discourse on “military urbanism” characterized by “uniformity, geometrical clarity, control, architectural economy, and unadorned monumentality” (2010, 63).

These ideals of “uniformity, geometrical clarity, control, architectural economy, and unadorned monumentality” are clearly displayed in the group of eight cities and in the images of Mariembourg and Philippeville in particular. Moreover, the group quite literally puts these ideals on the map by locating them in towns in the real world, which is important given that the readership of the book would have had few opportunities to see a bastioned trace in such a clear and perfected form. Most communities did not completely refurbish their medieval walls if they did so at all. Even amidst a flurry of fortification building in the Netherlands in the decades leading up to the Dutch Revolt, only thirty towns or so were refortified – which is a lot, but a fraction of the hundreds of towns van Deventer sketched (Martens and van de Vijver 2016, 77). Even with first-hand experience, the geometric complexity of the bastioned trace

is difficult to see. Niccolò Machiavelli describes it unflatteringly as a tangle of “walles crooked, and full of tournynge, and receiptes” surrounded by countryside stripped of “tree or house” (1562, xciii-xcvii). Edmund Spenser refers to them as “part circolare, / And part triangulare” and “Not built of bricke, ne yet of stone and lime, / But of thing like to that Aegyptian slime” (2006, 2.9.21-22; Burlinson 2006, 103-7) Nathaniel Hawthorne laments centuries later while visiting Ticonderoga with a “young lieutenant of engineers” that he could see “nothing but confusion in what chiefly interested [the lieutenant]; straight lines and zigzags, defence within defence, wall opposed to wall, and ditch intersecting ditch; oblong squares of masonry below the surface of the earth, and huge mounds, or turf-covered hills of stone, above it” (1974, 186-191). As Hirst notes in a discussion of why the new fortification systems have often struggled to achieve heritage site status in the twentieth century, “Many of these structures are difficult to identify, since they consist in the main of earthen ramparts that barely show above a ditch covered by a glacis” (1997, 13).

The geometric complexity of the bastioned trace is much easier to see in paper cities, which were becoming a larger part of early modern visual culture in the 1560s and 1570s. Manuscript images, survey drawings, and even three-dimensional models circulated widely among professional engineers, military leaders, and state decisionmakers, and a steady commerce in fortification technology, especially between Italy and the Low Countries, has been well established (Martens and van de Vijver 2016; Henninger-Voss 2004). These representations were not widely accessible to the general public,

however. Printed images of refined bastioned trace systems as seen from directly overhead (i.e., in ichnographic projection) or at a slightly oblique angle were mostly the stuff of Venetian military manuals, which typically depict conceptual fortifications rather than images of real European cities (Breman 2002).^v Books of this kind started to emerge in the north in the 1570s, with Hans van Schille's *Form und weis zu bauen* in Antwerp and Peter Whithorne's *Certaine Wayes for the Ordering of Souldious* in London, both published in 1573. Aurelio de Pasino's *Discours sur plusieurs poincts de l'architecture de guerre*, also published in Antwerp, followed in 1579. None of these include representations of the fortifications of real European cities.

Detailed ichnographic or oblique images of the bastioned trace started to be more common in printed books in the decades prior to the publication of the group of eight towns in 1581, but they were still rare in popular print to that point. The richest source is probably Giulio Ballino's *De disegni delle piu illustri citta, & fortezze del mondo* (1569), which includes ground plans for contemporary fortification projects among bird's-eye views of many European cities' fortifications. Guillaume Gueroult's *Epitome de la Corographie d'Europe* (1563) includes no maps of this kind, and neither does Abraham Ortelius's *Theatrum orbis terrarum* (1570), although both include maps of cities in bird's-eye perspective in which fortifications are visible. Antoine du Pinet's *Planz, Pourtraits, et Descriptions de Plusiers Villes et Forteresses* (1564) includes a bird's-eye drawing of Mirandola that gives minute details of new fortifications, but it is concerned with information specific to the Papal siege of 1551 and is stylistically consistent

with the conventions of live-action (*ad vivum*) representations of siege warfare (Martens 2019a). Francois Belleforest's French translation of Sebastian Munster's *Cosmographia*, published as *Cosmographie Universielle* in Paris in 1575, includes a drawing of Le Havre (Havre-de-Grace) showing a complex bastioned trace system in steep bird's-eye perspective.^{vi} The flow of images depicting the new fortifications in detail increased with *Civitates orbis terrarum*. The first volume, published in 1572, depicts the bastioned trace at Farmagusta and Malta in steep bird's-eye perspective, and it also displays the fortifications of Milan and the citadel at Antwerp (although it must be acknowledged that the latter two maps are much larger in scope and include much more information in addition to the fortification systems). The second volume, published in 1575, includes the fortifications of Gravelines and Groningen in great detail, while La Rochelle and the citadel at Metz might also be described as providing intricate details of fortification systems from a vantage point nearly overhead. The citadels of Tunis may be the most striking examples of the bastioned trace in this volume, but, like du Pinet's map of Mirandola, the *Civitates orbis terrarum* map of Tunis follows the conventions of representing siege warfare (in this case the Imperial siege of 1535).

While the state of the knowledge about the distribution of early modern maps and printed books is always changing, a reasonable conclusion to be drawn is that the group of eight maps in the third volume of *Civitates orbis terrarum* was published at a moment when maps like these were increasingly entering mainstream visual culture through printed books and that these maps call attention to and epitomize that process. Certainly, from the

late 1560s on there were more bastioned trace systems to map and necessarily more plans and surveys – like van Deventer’s – in circulation and accessible to the print industry. The staging of the group of eight towns suggests, however, that detailed representations of bastioned trace systems in the real world were also visual attractions. They were relatively novel, especially for the general reading public. They transparently communicate the mathematical precision informing ideals of urban designs that extended beyond military architecture. They made city walls that were occulted in turf-covered zigzags visible in their entirety. They provided images to go along with the stories circulating about amazing new fortress-cities like Mariembourg and the talent behind them.

How maps of the bastioned trace work as visual attractions in *Civitates orbis terrarum* can be further elucidated through a brief examination of the map of the fortress-city of Hesdin (Hesdin Fort) in the fourth volume (1588). Spread across two pages, Hesdin is the largest image of a bastioned trace fortification system published in the atlas to that point (figure 6). It is presented as a highly regular pentagon with five arrow-head bastions, and its symmetry is marred only slightly by the orientation of the bastion in the lower right corner. Like the maps showing the bastioned trace in the group of eight, Hesdin crowds the frame of the map and is thereby isolated from its surrounding environment, which is further obscured by cartouches in three corners of the map and images of people in the fourth. Presented this way, the fortress-city appears to be floating in its geometric clarity among ornaments above a flat and undistinguished landscape.



Figure 6
Hesdin from *Civitates orbis terrarum* (1588). Art Resource.

The map somewhat misrepresents Hesdin in significant ways. The new fortress-city, also designed by van Noyen and much resembling Philippeville, was built not as the regular pentagon as shown in *Civitates orbis terrarum* but as an irregular pentagon (Dereymaeker 2016; Martens 2019b). Its irregular shape is an effect of its conformity to the terrain and waterways in which it is situated. The map of Hesdin that appears in *Civitates orbis terrarum* has not been satisfactorily attributed, but drawings of the fortification plans are extant in at least two manuscript collections as well as in the remains of van Deventer’s survey (Gerbino 2018, 32; Martens 2019b). Using van Deventer’s map as a reference (figure 7), the irregular pentagon is a relatively small and quiet part of a landscape that includes the old city of Hesdin to the right of the new fortress-city. Parts of the old city are also visible in van Deventer’s miniature, the proportions of which *Civitates orbis terrarum* approximates. Hesdin is represented similarly as a small fortress-city in a seventeenth-century map by Willem Janszoon Blaeu (figure 8). The orientation of Hesdin in Blaeu’s map does not cleanly align with van Deventer’s map, even allowing for the changes effected by the addition

of a sixth bastion in 1593, but both depict Hesdin as an asymmetrical fortress-city that takes its shape from the natural environment of which it is a central but relatively small part (Dereymaeker 2016).



Figure 7
Hesdin by Jacob van Deventer (c. 1558-1572). Courtesy of the Biblioteca Nacional de España.



Figure 8
Siege of Hesdin by Willem Janszoon Blaeu. *Novum Ac Magnum Theatrum Urbium Belgicae* (1649). Art Resource.

As with the group of eight towns in volume three, the scale of Hesdin is lost in *Civitates orbis terrarum*'s representation through the elimination of the surrounding landscape, and it is isolated by the ex-

clusion of details about the built and natural environment that explain its irregularity in other representations. Like the maps of Mariembourg and Philippeville, the bastioned trace dominates the representation of the town, but unlike those maps, the image is inaccurate in a way that enhances its geometric clarity. Whether Hogenberg or van de Neuvel were working with a survey drawing that was itself inaccurate or whether they selectively modified van Deventer's map – or whether they even had van Deventer's map – are questions that await further research (Germino 2018). How the image of Hesdin in *Civitates orbis terrarum* came to misrepresent the town matters less, at least from a literary critical perspective, than the way its enhanced symmetry is integral to the composition of the map as it appears in the book. The gutter splits the pentagon down the middle of the fortress, evenly separating the bottommost bastions and dividing the topmost bastion in a way that would not be possible were Hesdin represented accurately. This artificial symmetry is further enhanced by the addition of complementing circular badges in both top corners and cartouches identical except for the text in both bottom corners. The old city that would appear only on the right side of the map is crowded out of the frame, and the road network on that same side is eliminated along with the creek it follows. The Hesdin in the real world of 1581 is a marvel of working ideal proportions around such sublunary constraints as creeks and old buildings, and it certainly could have made a good show across two pages of *Civitates orbis terrarum*, but not the same show. The enhanced symmetry of the image lends itself to a clearer display of the mathematical ideas informing the bastioned trace, which the atlas highlights by the size of the fortress-city relative to the

frame, by the elimination of geographical information that would make the map less symmetrical, and by the isolation of the city from other reference points.

An interesting question raised by the images of the fortress-cities this essay has examined is how *Civitates orbis terrarum* and books like it influenced the emergence of the bastioned trace in mainstream visual culture. This is a big and multifaceted question that deserves far more critical attention than it has received, and more than this essay can give it in a short conclusion. That the bastioned trace had become a part of popular visual culture by the turn of the seventeenth century is demonstrated nowhere more clearly than by Shakespeare's reference to "the roundure of your old-faced walls" as a poor defense against "cannons' malice" in *King John* (1595-1596) (2018, 2.1.251-259). Since for reasons discussed above few if anyone in a London theater would have had enough first-hand experience with the bastioned trace to visualize one all that clearly, it can be assumed that books like *Civitates orbis terrarum* played a major role in establishing a visual reference through which these lines in *King John* make sense – a role that would expand as popular cartography grew as a genre throughout the seventeenth century (Lewis 1992; Pollak 1991). As this article has, hopefully, demonstrated, turning the bastioned trace into a character in a printed book was a process that involved creating a visual narrative through the shaping and staging of images, sometimes at the expense of their accuracy. The bastioned trace that emerges in popular visual culture by the turn of the seventeenth century is, by implication, one that is filtered through these processes of idealization and, to some extent, fictionalization.

The most famous image of the bastioned trace in *Civitates orbis terrarum*, one published at almost the same time *King John* was written, sheds light on this issue. The map of the fortress-city of Palmanova (figure 9) that appears in the fifth volume (1596) was reproduced in many atlases throughout the seventeenth century and remains to this day one of the best-known images of the bastioned trace (de la Croix 1966).



Figure 9
Palmanova from *Civitates orbis terrarum* (1596). Courtesy of the British Library.

It is also exceptionally embellished and conspicuously inaccurate. As with Hesdin, Palmanova covers two pages of *Civitates orbis terrarum*, and also like Hesdin, the gutter splits the image into two perfect halves emphasizing its symmetry, as do the roads depicted as leading from the fortress and fading away toward the top corners of each facing page. Two cartouches fill the two bottom corners, each identical except for the written text. In the top corners are circular badges, also identical except for their constituent images (one is a crest of the Venetian Republic, and in the other is a crest of the city). As with Hesdin, the suppression of landscape detail gives the impression of a

perfectly formed fortress-city isolated from its surroundings and floating in space.

Inaccuracies in the image contribute to this geometric clarity. The earthwork scarps surrounding the bastions are minimized in the map, which gives the paper city a crisper outline than the real city (Baier, Bischoff, and Hilliges 2011; Ghironi and Manno 1993; de la Croix 1966). The scarps that are there, barely visible but hinted at in a green shadow on the exterior ring-road, highlight rather than obscure the contours of the bastions, which are also inaccurate. Not all of the bastions had been built by 1596, and the bastions are depicted as smaller relative to the span of the walls than they actually are, as revealed by a comparison with a plan of Palmanova from Pietro Bertelli's *Theatrum Urbium Italicarum* (1599) (figure 10). This misrepresentation is significant in that it gives more visual space for the gates that were controversially placed in the center of the walls over the objections of the military architects designing it (Scamozzi 1615; de la Croix 1966).^{vii} The central tower was not built by 1596 and would never be built. Its presence in the map gives the impression of a city far more developed than it was at the time and, standing at the nexus of the lines of communication between the gates, the fictional tower bodies forth the idea of the fortress-city as an instrument of command and control – or, less optimistically, as the realization of an absolutist ideal ordered around “an all-powerful, all-seeing central hub from which its streets radiate” (Lewis 2016, 58-59). The streets are also misrepresented as developed and bustling with people, giving Palmanova the appearance of a thriving city and not of an overgrown citadel that had very few buildings in it by 1596 and that would

struggle to cultivate a civilian population long after (Pollak 2010, 168; Braunfels 1988, 159-160; de la Croix 1966). And yet this map works effectively as a map because it presents a compelling image of Palmanova which, if the number of times it was reproduced throughout the seventeenth century is any measure, captivating the general reading public.



Figure 10
Palmanova by Pietro Bertelli,
Theatrum Urbium Italicarum (1599).
<https://earthworks.stanford.edu/catalog/stanford-gr152mp7207>

None of which is to suggest that the image of Palmanova in *Civitates orbis terrarum* is a fiction, even if it is a character in a book. It would eventually be completed and become something very much like the image that appears in *Civitates orbis terrarum* in 1596 or in *Theatrum urbium Italicarum* in 1599 as well as the star-shaped city included in Lorini's unpublished *Delle fortification* – all of which are engaged with the idea of a star-shaped city that had been circulating in humanistic architectural circles since the late fifteenth century (de la Croix 1972). The point, ultimately, is that the images of Palmanova or of any of the fortress-cities of *Civitates orbis terrarum* this essay has examined are formed in part by expectations of what a

fortress-city is supposed to embody. They may be representations of cities in the real world, but they are also paper cities in their own right that represent themselves as much as or more than they represent anything in the real world. While the maps of the bastioned trace in *Civitates orbis terrarum* provide important information about the design of new fortification systems and while the book's editors were to some extent constrained by the maps they had to work with, the maps nevertheless reflect a process of communicating, reinforcing, and also supplementing ideas and ideals of military urbanism that existed nowhere more clearly than in the book itself.

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ⁱ This article used primarily the 1581 Cologne edition (the title of which is *Vrbium praecipuarum totius mundi liber tertius*) in the collection of Queen's College Cambridge Old Library. Due to the different editions of the book and inconsistencies in the binding process, extant copies may have these images on four consecutive pages or they may have text or blank pages in between, but in every copy consulted these four maps are consecutive in that there are no images between the first and second groups of four.

ⁱⁱ The three cities are named after Charles V, his sister Mary of Hungary, and his son Philip II of Spain.

ⁱⁱⁱ Unless otherwise noted this and all other translations in this essay are the author's.

^{iv} Manesson-Mallet describes "regular" fortifications as those where all the sides and bastions are like one another and "irregular" fortifications as those whose sides and bastions are of different sizes.

^v Some notable examples of fortification treatises published prior to 1581 are follows: Giovanni

Battista de' Zanchi, *Del modo di fortificar le città* (Venice: 1554), includes several examples of the bastioned trace in ichnographic perspective; Giacomo Lanteri, *Due dialoghi* (Venice: 1557), includes several line drawings of bastioned trace plans; Domenico Mora, *Tre quesiti in dialogo sopra il fare batterie, fortificare una città* (Venice: 1567), also includes a some line drawings; Carlo Theti, *Discorsi delle fortificationi* (Venice: 1575), offers a comprehensive survey of different styles of ground plans concepts; Gregorio Zuccolo, *I discorsi di M Gregorio Zuccolo* (Venice: 1575), includes a few diagrams.

^{vi} Francois de Belleforest, *Cosmographie Universielle* (Paris: 1575), 111-112.

^{vii} The controversial decision to move the gates to the center of the walls may have been influenced by Vincenzo Scamozzi, who also claims to have laid the first bricks of the city, and it was aggressively resisted by the projects' military architects, Giulio Savorgnan and Buonaiuto Lorini.