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**The Concepts of Space in the Spanish
Translations of Vitruvius (1564, 1582, 1761
AND 1787). Their Differences from Gottfried
Semper's Idea of Space as Developed in *Der Stil*
(1860, 1863)**

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The Concepts of Space in the Spanish Translations of Vitruvius (1564, 1582, 1761 AND 1787). Their Differences from Gottfried Semper's Idea of Space as Developed in *Der Stil* (1860, 1863)

Daniel Dávila Romano

Abstract

The meanings of the term 'space' in four translations into Spanish of De architectura by Vitruvius are analysed here in order to clarify a piece of the 'prehistory' of the concept of space in Architectural Theory before Gottfried Semper. The texts studied here are: the first translation of Vitruvius into Spanish, by Lázaro de Velasco (1564); the first edition of Vitruvius in Spanish, by Miguel de Urrea and Juan Gracián (1582), the one by Joseph Castañeda (1761) and the most complete and thorough edition, by Joseph Ortiz y Sanz (1787). The aim of this study is to analyse these Spanish translations in order to recognize the meanings, uses and importance of the space between 1564 and 1787, a period which belongs to the so called 'prehistory' of the concept of space in Architectural Theory. Finally, an overview of Semper's idea of space and its use is offered in order to better recognise the leap forward his theory implied as regards this key concept in Architectural Theory.

Keywords: Gottfried Semper, History concepts of space, Vitruvius.

Introduction

The concept of space became a key one in Architectural Theory only after Gottfried Semper's theory¹ and the subsequent so called 'German tradition'. However, the concept of space in architecture must have appeared in a broader context in the field before becoming a key issue. How was the term used before the mid-nineteenth century? What did it mean then? Did Semper's idea of space exist before he began using it as a synonym of enclosed vacuum to dwell? Was it an important concept in Architectural Theory? These are some of the questions to be answered as regards the 'prehistory' of the concept of space in architecture.

Methodology and Index

The questions above are not easily answered. To do so, all the meanings and uses of 'space' in architecture in all theories, scholars, catalogues, etc. should be studied first. As all this work is impossible to be tackled in this paper alone, only the meanings of the term 'space' in four translations of Vitruvius's *De architectura* into Spanish between 1564 and 1787 are analysed here.

First, a list of the meanings of 'space' (only the ones applied directly to architecture) that appeared in the books is given. Second, we compare the use of 'space' (with the commented meanings) in a selected quotes of the books. Third, we compare the closest meaning of 'space' that appeared in Vitruvius' translations with Semper's idea.

Why Vitruvius

There are two reasons for choosing Vitruvius: an objective and a subjective one.

On the one hand, Vitruvius' was the most studied, translated, published and commented book on Architecture before the nineteenth century. Because of this, we can follow the conceptual changes of the term in the different translations throughout time. Thus, it is a means to analyse the evolution of an idea or concept.

On the other hand, this research derives from a mistake I made while reading the Spanish translation of *The Style*, by Gottfried Semper, as I wrongly attributed to Vitruvius an idea belonging to Semper's conception of the term 'space'. In Chapter 10, Stereotomy, Semper comments and

¹ S. Hildebrand, "Zum Raumbegriff bei Gottfried Semper," Lecture at TU Munich. 2007; D. Leatherbarrow, *Architecture Oriented Otherwise* (New York: Princeton Press, 2009); H. F. Mallgrave and E. Ikonomou, *Empathy, Form and Space: Problems in German Aesthetics, 1873-1893* (Santa Monica: Getty Center for the history of Art and the Humanities, 1994); H. F. Mallgrave, *Architectural Theory. Volume I. An anthology from Vitruvius to 1870* (Malden: Blackwell Publishing, 2006); T. Panin, *Architectural Spatiality. The Dialectic between the Concepts of Raum and Bekleidung* (Saarbrücken: VDM Verlag Dr. Müller, 2009); C. Schriener, A. Denk, U. Schröder and R. Schützeichel, *Architektur, Raum, Theorie. Eine kommentierte Anthologie* (Berlin: Ernst Wasmuth Verlag, 2016); C. van de Ven, *Space in architecture: the evolution of a new idea in the theory and history of the modern movements* (Assen: Van Gorcum, 1978).

criticizes what Vitruvius had pointed out about the origin and characteristics of Pseudodipteral temples. To describe this kind of temple Semper indicated that there was enough «espacio» (space) for another line of columns in the middle of the peristyle.² Contrary to what I firstly assumed, «space» here does not imply the Semperian idea of space as a surrounded vacuum, but the area or place for something or to locate something («*Platz hätte*»³). Eventually, this led me to the next question: Did Vitruvio use the term 'space' and, if so, with what meanings? We have looked for the quote in which Vitruvius himself refers to this kind of temple:

«For the idea of the pteroma and the arrangement of the columns round a temple were devised in order that the intercolumniations might give the imposing effect of high relief; and also, in case a multitude of people should be caught in a heavy shower and detained, that they might have in the temple and round the cellar a wide free space in which to wait».⁴

Even though this translation refers to the «space in which to wait», I have realised that Vitruvius did not use the word «spatium» there, but «*laxamento liberam moram*», which has less to do with the idea of space by Semper:

«Pteromatos enim ratio et columnarum circum aedem dispositio ideo est inventa, ut aspectus propter asperitatem intercolumniorum habeat auctoritatem, praeterea, si ex imbrium aquae vis occupaverit et intercluserit hominum multitudinem, ut habeat in aede circa que cellam cum laxamento liberam moram».⁵

Despite this, I have found the word «space» and «espacio» several times in the English and Spanish translations respectively; the latter edition was the one in which it appears most. But it also appeared in the earliest editions. This led me to the idea that studying the evolution of the translations may offer a piece of information on the genealogy of 'space'. We have been using 'space' in relation to architecture for a long time, but what exactly for? Are any of its meanings related to Semper's conception of 'space'? That's how this research began.

The Different Uses of «Space»

Focusing on the uses of space that refer directly to architecture, only four meanings are to be found in the Spanish translations of Vitruvius here studied:

² G. Semper, *El estilo en las artes técnicas y tectónicas o Estética practice* (Buenos Aires: Azpiazu, 2013), 780; G. Semper, *G. Style in the technical and tectonics arts, or Practical aesthetics* (Los Angeles: Getty Research Institute, 2004), 172.

³ «Platz hätte» is the expression that Semper used there. G. Semper, *Der Stil in den technischen und tektonischen Künsten oder, Praktische Aesthetik Ein Handbuch für Techniker Künstler und Kunstfreunde* (München: Bruckmann's Verlag, 1879).

⁴ M. Vitruvius, *The Ten Books on Architecture* (London: Humphrey Milford, Oxford University Press, 1914), 82.

⁵ M. Vitruvius, *Los diez libros de arquitectura* (Madrid: Alianza Editorial, 1995), 87.

Space as Length (S1)

This is the easiest meaning to understand and the most common use of «espacio» (space) in all the Spanish translations of Vitruvius: space as the distance between two points or parts of the building. However, some technical concepts such as «intercolumniation» have been changed for the word «space» in recent translations.

«Después habla de los diferentes espacios de las Columnas, que componen los cinco modos llamados Pychnostylo, Systylo, Diastylo, Aerostylo, y Eustylo».⁶

«Then he speaks about the different spaces between columns, which constitute the five types called Pychnostylo, Systylo, Diastylo, Aerostylo, y Eustylo».⁷

Space as Area, Surface or Place to Do Something (S2)

Here space refers to an «area» or «surface», but it also means a «place» where an activity can be developed. Sometimes it may be substituted by another word such as: «lugar» (place) or even «habitación» (room).

«La magnitud ... se proporcionará a la cosecha y número de tinajas. Si la prensa fuere de viga, no será el sitio menos largo de 40 pies, para que tenga suficiente lugar el que la maneja: su anchura no será menor de 16 pies; pues así tendrán espacio bastante para sus operaciones los que trabajan».⁸

«The magnitude ... will be provided to the harvest and number of jars. If the press were made of wood, the place [where it is held] will not be less long than 40 feet, so the person to handle it has enough space to do so; and its width will be not less than 16 feet, so that the workers have enough space to operate».

Space as an Empty Small Volume (S3)

This meaning appears in two kinds of contexts: space as a small gap between/among the constructive parts of a building and space as the ‘air’ that surrounds an object. An example of the latter is given here:

«Sobre estas leyes se hacen matemáticamente los vasos de bronce ... Colócanse después ... en unas celdillas particulares debajo de las gradas del teatro, sin que por ninguna parte toquen pared, teniendo encima y al rededor espacio vacío».⁹

⁶ M. Vitruvius, *Compendio de los diez libros De Architectura* (trans.) Joseph Castañeda (Madrid: Gabriel Ramírez, 1761), 10.

⁷ The author of this work makes these translations from the Spanish quotes and he thanks the help given by Professor Beatriz Giudici and Javier Casares Arias, PhD Student at CBM. However, any kind of inaccuracy or mistake should be attributed exclusively to the author of this paper.

⁸ M. Vitruvius, *Los diez libros De Architectura* (trans.) Joseph Ortiz y Sanz (Madrid: Imprenta Real, 1787), 154.

⁹ Ibid, 117.

«Under these laws the bronze glasses are mathematically made ... Then they are placed ... in special cells under the theatre seats, without their touching a wall, having over and around empty space».

Space as an Enclosed Vacuum to Dwell (S4)

Here we have the most interesting use of space in these translations of Vitruvius in terms of its relationship with Semper's concept of space: the empty space that has been enclosed by constructive materials. This use of space appears only once in the original book, but it appears in two of the three translations, while in another one it is substituted by the word «hueco» (gap, space), which refers to the same idea of a volumetric vacuum that has been surrounded. We analyse this case in detail in the next part. But before, let us read the quotation below:

«Los de los Colcos en el Ponto, por la abundancia de selvas que tienen, ponen llanos en tierra troncos enteros de arboles á una y otra mano, dexando entre ellos tanto espacio quanto sufre su longitud, á cuyos extremos van atravesando otros que cierran el espacio de la habitacion...».¹⁰

«The Colchians in Pontus, where there are forests in plenty, lay down entire trees flat on the ground to the right and the left, leaving between them a space to suit the length of the trees, at the end of which they place above these other trees, which rest on both ends of the former ones and at right angles with them. These four trees enclose the space for the dwelling».¹¹

Evolution of the Use: A Comparison

Before beginning this section, it is important to notice that one edition quite differs from the others. While the editions of 1564, 1582 and 1787 were nearly a direct translation of the *Ten Books* from Latin, the edition by Joseph Castañeda (1771) was a translation of Perrault's translation of Vitruvius into French (1673). This latter edition is closer to an adaptation of the *Ten Books* than to a translation, which actually affects our work. As we are going to show the different translations of the same parts in three of these books, it is not possible to do so with Castañeda's edition, because the expressions and content are very different from the others. Moreover, only the first and second meaning of space (S1 + S2) can be found in it.

Below, some representative parts of each translation of Vitruvius are compared in order to analyse the changes in the uses of the language and concepts. The selection of the parts is in direct connection with the types of meanings mentioned in the previous section.

¹⁰ Ibid, 29.

¹¹ Vitruvius, *The Ten Books on Architecture*, 39.

Space as Length (S1)

This meaning of ‘space’ appears in all the editions used here. There is at this point a consensus in the meaning and use of ‘space’. For instance, three quotes of the same part in Vitruvius are provided below:

«El pseudodípteros tiene ocho columnas en la fachada, y otras ocho en el póstico: en los lados quince por parte, incluidas las angulares. Así las paredes de la nave en fachada y pórtico tienen enfrente las quatro columnas del medio: y el espacio en rededor desde las paredes de la nave á las columnas será de dos intercolumnios y un imoscapo»¹² (1787).

«The pseudodipteral temple has eight columns at the front, eight at the rear, and fifteen on each side, including those of the corners. Thus, the front and rear walls of the actual nave face the four inner columns of those eight front and rear ones; and the space around it from the walls of the nave to the columns will be of two intercolumniations and one diameter of a column».

«Pseudodipteros se asienta de manera que en la frente, y en el postigo ay de ocho en ocho las columnas, y en los lados con las esquinas de quinze en quinze. Mas son las paredes de la celda cótra quatro columnas medianas, y estas quatro han de ser enfrente del postigo. Asi el espacio de entre estas dos ordenes de columnas sera medido de grueso baxo de la columna, y sera el espacio de la pared hasta los postreros ordenes de las columnas»¹³ (1582).

«The pseudodipteral temple is designed in a way that eight columns can be found at the front and rear respectively and fifteen on each side, corners included. And the wall of the cell faces the four central columns of those eight at the front. Thus, the space between these two series of columns should be measured from the diameter of the base of the columns; and this space will be that between the actual nave wall and the inner surface of the columns».

«Otros tienen en la frente y espaldas a ocho columnas, y en los lados con las de las esquinas a quinze columnas y venían las paredes del templo a confrontar con las quatro columnas q estaban en medio de la orden de la frente y respaldo y quedava el espacio desde la pared al extremo de las postreras columnas dos intercolumnios y un grueso de columna por lo baxo»¹⁴ (1564).

«Others have at the front and the rear eight columns, and on the sides, corners included, fifteen columns; and the wall of the cella faces the four central columns of the eight ones at the front and rear; and the space between the wall and the columns was of two intercolumniations and one diameter of a column».

¹² Vitruvius, *Los diez libros De Architectura*, 62-63.

¹³ M. Vitruvius, *De Architectura dividido en diez libros* (trans.) Miguel de Urrea and Juan Gracián (Alcalá de Henares, 1582), 38.

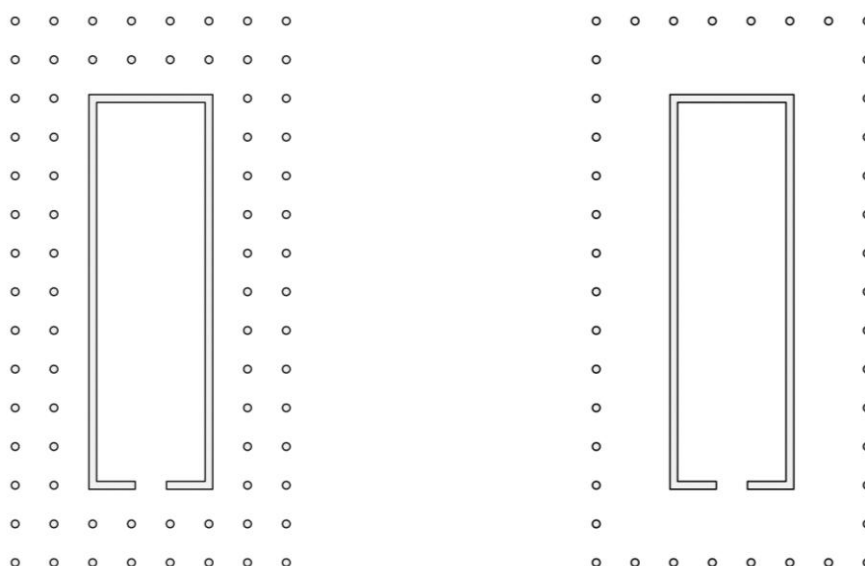
¹⁴ M. Vitruvius, *Los X libros de arquitectura de Marco Vitrubio Polión*, according to the translation of Lázaro de Velasco (1564), transcription and study by F. Javier Pizarro Gómez and Pilar Mogollón Cano-Cortés (Caceres: Cicon Ediciones, 1999), Penultimate page of Book III, Chapter 1: “On the formation of temples”.

Space as Area, Surface or Place to Do Something (S2)

The idea of a place to carry out an activity and an area or surface to place things is not always meant by «space», but by means of other words such as the ones used here to define it.

The most convenient quote to show these differences is, in fact, the one that Semper was referring to when criticising Vitruvius' explanation of the origin of the so called Pseudodipteral Temple, which eventually raised in us an awareness of the “problem” and led us to do research into this concept. See Figure 1.

Figure 1. *Two Schemes: Dipteral Temple (left) and Pseudodipteral Temple (right) according to Vitruvius. Gottfried Semper (§172) Criticizes the Vitruvian Explanation of the Origin of the So-called Pseudodipteral Temple (as a Dipteral one without the Internal Row of Columns) because there is in the Oldest ‘Pseudodipteral’ Temples No Correspondence between the Order of the Columns and the Cella; Something that the Temple of Selinunte Shows*



«El autor de estas proporciones fue Hermogenes, que inventó también el octástylo pseudodípteros, pues quitó al dípteros las filas interiores de columnas en numero de 38: y con ello ahorró gasto y trabajo: de los dos pórticos hizo uno ancho y desembarazado para pasear al rededor de la nave: nada quitó del exterior aspecto; Y sin echarse menos las columnas quitadas, que en la realidad no se necesitan, conservó la magestad en lo restante de la obra. Porque las alas de las columnas al rededor de la nave se inventaron para dar magestad al aspecto con los intercolumnios. Además, para que en caso de sobrevenir alguna lluvia quando hubiere concurso en el Templo, tenga lugar la gente donde esperar con libertad y desahogo que cese el agua. Estas ventajas tiene el pseudodípteros»¹⁵ (1787).

¹⁵ Vitruvius, *Los diez libros De Architectura*, 66.

«The author of these proportions was Hermogenes, who also invented the Pseudodipteral and Octastyle temple by removing the inner rows of columns in the dipteral temple in a total number of 38,¹⁶ thus saving expenses and labour. From the two porches he made one, wider, and unfettered to enable people to walk around the nave. He removed nothing from the outside appearance; and without the columns he removed, which, in fact, are not really needed, he managed to preserve the majesty of the work. Because the peristyle was invented to give majesty to the appearance of the building itself by means of intercolumniations, and so that, in the event of rain, when there is a congregation in the temple, people have a place where they could wait freely and comfortably until the rains stops. These advantages does pseudodipteral temple have».

« ... si la fuerça del agua de las lluvias encerrasse, y detuviesse alguna multitud de gente, para que en aquel templo, o casa cerca de la celda con la anchura tengan donde descansan libremente»¹⁷ (1582).

« ... if the force of the rainfall made a congregation remain at the temple, so that in that temple or house near the cella there is width enough where these people can rest freely».

« ... Inventose [Hermogenes] elponer columnas alderredor del cuerpo del templo para q el aspecto con la aspereza de las columnas tuviese autoridad. I también para que si acaesciese venir torvellino de agua y se enterrase multitud degente quedase espacio alderredor del cuerpo del templo do pudiese detenerse libremente»¹⁸ (1564).

«He [Hermogenes] conceived placing columns around the temple body so that their rough appearance gave it authority. And in the event of a downpour, with a congregation confined at the temple, were space around the body where they could remain freely».

As it can be seen, there is neither consensus nor a clear evolution of the term ‘space’. It is used in the first edition (1564), but not in the following ones (1582 and 1787).

Space as an Empty Small Volume (S3)

As we have seen in part 2, one of the meanings of ‘space’ is «a little empty volume between/among constructive materials». This idea appears a couple of times in each edition, but the term used is not always «space» but «hueco» (gap, hollow, empty space). There is here no agreement in its use either. However, it appeared in the edition of 1787.

« ... dexar un espacio vacío del medio en la pared, entre las piedras de las caras, que se llenará despues de piedra roxa escuadrada, de ladrillo cocido, ó de piedra dura ordinario, formando en dicho medio una pared de

¹⁶ The size of the temple invented by Hermogenes in terms of the number of columns at the sides and at the front is not completely clear. According to the quotes used to explain the previous section (“Space as Length”), the size of the temple should be: 8 x 15, like the Figure 1. However, and as it is explain in this quote, Hermogenes removed a number of 38 columns of the inner row, which implies that the temple should measure: 8 x 17.

¹⁷ Vitruvius, *De Architectura dividido en diez libros*, 40.

¹⁸ Vitruvius, *Los X libros de arquitectura de Marco Vitrubio Polión*, Penultimate page of Book III, Chapter II: “On the five types of temples”.

dos pies de ancho, atando las dos frentes con grapas de hierro emplomadas»¹⁹ (1787).

« ... leave an empty space in the middle of the wall, between the stones of the faces, which will be filled afterwards with squared purple stone, cooked brick, or ordinary hard stone, forming in that middle a wall two feet wide, tying the two sides with leaded iron staples».

«Pero el que quisiere no dar en este vicio, llene lo hueco del medio entre las dos hazeras de las paredes, haziendo un ortostato, o con piedras quadradas, o coloradas, o con tejas quebradas, o con pedernales, y con sus chapas, o rampones de hierro emplomadas...»²⁰ (1582).

«But whoever wants not to fall into this vice should fill the hollow between the two sides of the walls, making an orthostate with square or coloured stones, broken tiles or with flints; and with their plates, or leaded iron ramps... ».

«I si alguno quisiere no caer eneste vicio, dexando lo hueco de en medio por de dentro q pueda entre las dos hazes haga unas paredes de grueso de dos pies de piedra bermela quadrada o de ladrillo o delas piedras duras ordinarias como es el pedernal y trabe las frentes delas piedras cogras de hierro fixadas con plomo...»²¹ (1564).

«And if anyone wishes not to fall into this vice, leaving a gap between the two faces, he should make a two-feet thick wall of square stone, brick or ordinary hard stones such as flint and then fasten the fronts of the stones with lead-fixed iron staples... ».

Space as an Enclosed Vacuum to Dwell (S4)

Only one example can be analysed because this use only appears clearly just once. The idea of an enclosed volume to inhabit appears in all the translations and the term used in two of the three translations is «space».

«Los de los Colcos en el Ponto, por la abundancia de selvas que tienen, ponen llanos en tierra troncos enteros de arboles á una y otra mano, dexando entre ellos tanto espacio quanto sufre su longitud, á cuyos extremos van atravesando otros que cierran el espacio de la habitacion...»²² (1787).

«The Colcos in Pontus, because of the abundance of rainforest they have, place on the ground tree trunks, leaving between them a space equal to their length and piling up at the far end of each trunk other trunks which close the space of the room».

«En el Poto la nació de Colcos, porque tiene abundancia de montes, edificá có arboles perpetuos, y durables, llanos puestos en tierra a mano derecha, y mano izquierda, dexando espaciio entre ellos, quianto la largura de los arboles lo sufre, y en las ultimas partes dellos encima otros, atraviessan, que cerca al rededor el medio espacio de la abitacion»²³ (1582).

¹⁹ Vitruvius, *Los diez libros De Architectura*, 43.

²⁰ Vitruvius, *De Architectura dividido en diez libros*, 27.

²¹ Vitruvius, *Los X libros de arquitectura de Marco Vitrubio Polión*, Second page of Book II, Chapter VIII: "On the types of stonework".

²² Vitruvius, *Los diez libros De Architectura*, 29.

²³ Vitruvius, *De Architectura dividido en diez libros*, 22.

«In the Pontus, the Colchians, since they have an abundance of woods, build with perennial and resistant trees which are placed on the ground to the right and to the left, leaving as much space between them as the length of the trees is capable of providing, and then place other trunks across and on top on them, thus enclosing the space of the room».

«Acerca de la nacion de los Colcos q agora dizen Cumanja en Trapisonda, porel abundancia que ay de bosques, ponen unos arboles altos, labrados ados hazes hincados en la tierra, dexando tanto espacio de uno a otro quanto puede alcanzar el largo delos arboles. I lyego en lo alto alcabo de ellos ponen otros atravesados q viene a cerrar el hueco de la morada enmedio...»²⁴ (1564).

«[...] the Colchians in Pontus, [...] who have woods in plenty, put entire trees flat on the ground to the right and to the left, leaving between them a space equal to their length, and then they place others, across, on top of the tress on the ground, thus enclosing the space for the dwelling».

In this quote, the first meaning of ‘space’ is also provided (S1-distance) when describing how the logs were placed, which claims that this use of the term was relatively common.

What Expression Did Vitruvius Use?

«Apud nationem Colchorum in Ponto propter silvarum abundantium arboribus perpetuis planis dextra ax sinistra in terra positis, spatio inter eas relicto quanto arborum longitudines patiuntur, conlocantur in extremis partibus earum supra alterae transversae, quae circumcludunt medium spatium habitationis».²⁵

«[...] the inhabitants of the Colchians in Pontus, due the abundant and dense forests in the area, place trees of equal size on the ground to the right and left, leaving between them a space equivalent to their height, and then they place across, at the end of each tree, others, which surround the space of the room».

The answer is also «spatium» (space). Although it is not that relevant, one may wonder why Lázaro de Velasco avoided the term. The fact is that Vitruvius and his translators accepted the general conception of architectural space as an enclosed vacuum made of constructive materials. Nevertheless, it means that space (S4) was then an important concept for architectural theory. It simply appeared as a means to speak about some kind of construction. Nothing more, nothing less.

Gottfried Semper’s Idea of Space and its Use

Semper’s conception of space began in *Die vier Elemente der Baukunst* (1851) and in «Über die formelle Gesetzmäßigkeit des Schmuckes und dessen Bedeutung als Kunstsymbol» (1856). He also developed his ideas in *Der Stil in den technischen und tektonischen Künsten; Oder, Praktische*

²⁴ Vitruvius, *Los X libros de arquitectura de Marco Vitrubio Polión*, Book I, Chapter VI.

²⁵ Vitruvius, *Los diez libros de arquitectura*, 54.

Asthetik (1860, 1863), specially the chapters on Textiles (volume 1), but also in the ones devoted to Carpentry and Masonry (volume 2).

Protection, coverage and enclosure are the actions that relate to the genesis of architectural space for Semper. Space means the enclosed vacuum by means of cladding, which can be independent from the building structure itself.²⁶ This is the basic and general idea of space that Semper developed, but he went a step forward.

For example, he used 'space' to describe the central organization of the Scandinavian wooden church:

«Diese kirchen sind nicht Centralbauten in byzantinischer Weise, vielmehr entsprechen sie nach der Form des Grundplanes einer kurzen Basilika, aber sie sind es in dem Sinne freier Gruppierung von Räumen um einen vorherrschenden aber keinesweg vollständig unterjochenden Hauptraum».²⁷

«These churches were not centrally planned buildings in the Byzantine manner; they were much more like a shortened basilica as regards floor plan. They were centrally planned, however, as spaces freely grouped around a dominant one, but, by no means, subjugating main space, and in the sense of a *painterly principle*».²⁸

The term 'Raum' (space) was even accompanied by other words that modified or complemented its meaning; for example, '*Raumvertheilung*' (spatial distribution). Thus, 'space' was not just the relevant result of cladding, but a concept to describe the characteristics of different kinds of buildings. Here is a quote in which Semper made the distinction between space as a result of its functionality or space as a result of other architectural features: space as a result itself vs. space as a 'residue' of other architectural priorities.

«Zu dieser erhabenen Plattform mit ihrer Ziegeltäfelung und dem mehr ornamentalen, denn Schutz gewährenden Zinnenkranze führten prachtvolle Freitreppen und Rampen hinauf, den Palästen und Tempeln entgegen, deren alleinig erhaltene unterste Mauertheile unter bergen von Schutt und Erde tief begraben liegen, wodurch schon der sichere Beweis gegeben ist, dass sich ein vielstöckiger sehr bedeutender Hochbau über ihnen erhoben hatte, was übrigens auch schon aus der enormen Diche der Mauern und den geringen Zwischenräumen, die sie trennen, unzweifelhaft hervorgeht; Man sieht deutlich diese Gänge, die bei einer Länge von dreissig bis vierzig Meter zuweilen nur sechs bis sieben Meter Breite haben, sind nicht durch die Zweckmässigkeit der Raumvertheilung bedungen, sondern gleich jenen Favissae der Substruktion, auf denen sie stehen, aus einer konstruktiven Idee hervorgegangen».²⁹

«The raised platform, with its tile facings and battlements that were more ornamental than protective, had magnificent open staircases and ramps

²⁶ Only the surface layer of the Space enclosure had a relationship with the '*Raumesidee*' (spatial idea) for Semper. Semper, *Der Stil in den technischen und tektonischen Künsten ; oder, Praktische Aesthetik. Ein Handbuch für Techniker, Künstler und Kunstfreunde*, 318.

²⁷ Ibid, 282.

²⁸ Semper, *Style in the technical and tectonics arts, or Practical aesthetics*, § 151.

²⁹ Semper, *Der Stil in den technischen und tektonischen Künsten ; oder, Praktische Aesthetik. Ein Handbuch für Techniker, Künstler und Kunstfreunde*, 322.

leading up to its palaces and temples. All that has survived of the latter are the lower parts of the walls buried under mountains of rubble and earth. That alone proves that a major multi-storey building must have risen above them, as also derives from the enormously thick walls and the narrow spaces between them. These passages can be seen quite clearly; they are thirty to forty metres long, but sometimes only six to seven metres wide. They are not dictated by the need to divide space; like *favissae* in the substructure on which they stand, they developed from a structural idea». ³⁰

Space depends on cladding, and both aspects have an intense relationship, normally of accordance, and, sometimes, of contrast. One of the most interesting examples of the latter is the contrast between the longitudinal space of the *Galerie d'Apollon* (Louvre) and the central (90° rotated) decoration of the ceiling by Delacroix.

«Ich kene keinen Raum, der in Beziehung auf allgemeine architektonische Harmonie mit dieser herrlichen Gallerie zu vergleichen wäre. Das Hauptbild der Mitte ist, bei Gelegenheit der restauration dieses Saales, die unter der Leitung der Herren Duban und Séchan erst vor wenigen Jahren vollendet wurde, con dem Maler Delacroix ausgeführt worden; Dieses ist so orientirt, dass der Beschauer vor das Fenster treten und diesem den Rücken zuwenden muss, um es richtig zu sehen – gewiss für diesen Fall die schicklichste Disposition: obgleich die Form der Gallerie dazu einladen mochte, das Bild so zu wenden, dass der, den reich verzierten Korridor durchreitende, Besucher der Kunstsammlungen des Louvre dasselbe auf seinem Wege en passant richtig sehen und geniessen könne. Durch die Orientierung, die Delacroix dem Deckenbilde gab, wird das Mittelfeld der Mauerseite der Gallerie zu einem Centralpunkte des Raumes, der, wie schon bemerkt worden ist, eigentlich keinen Selbstzweck verräth, sondern sich als Passage oder als Korridor manifestirt. Der nur erst angedeutete Gedanke würde erst dann sich vollständig aussprechen, wenn, dem herrlichen Delacroix'scheu Bilde enrsprechend, irgend ein kräftig heraustretendes Monument die Monotonie der langen Wandfläche gerade in der Mite derselben unterbräche». ³¹

«I know of no space comparable to this wonderful gallery in terms of its general architectural harmony. The main painting in the centre was completed by [Eugène] Delacroix just a few years ago, when the gallery was restored under the direction of [Félix-Louis-Jacques] Duban and [Polycarpe-Charles] Séchan. Its orientation makes the observer step in front of the window and turn his back to it to see the painting properly –certainly the most suitable disposition in this case. The shape of the gallery might suggest turning the picture so that the visitor to the Louvre's art collection walking through the lavishly decorated corridor could see and enjoy it *en passant*. The orientation chosen by Delacroix for the ceiling painting makes the middle field of the gallery wall side a central point in the space that, as has already been noted, has no actual purpose except to be a corridor o passage. The idea merely hinted at so far could be fully expressed only if some

³⁰ Semper, *Style in the technical and tectonics arts, or Practical aesthetics*, § 70.

³¹ Semper, *Der Stil in den technischen und tektonischen Künsten ; oder, Praktische Aesthetik. Ein Handbuch für Techniker, Künstler und Kunstfreunde*, 68.

powerfully protruding statue, equal to Delacroix's magnificent painting, were to break the monotony of the wall surface precisely in the painting's centre».³²

Summing up, Semper overcomes the limits of 'space' as a simply «enclosed space». The implications of 'space' to describe architecture went much further than just its definition. The definition was only the beginning to speak about several qualities of architecture in spatial terms. That is why Semper related 'space' to composition (organization of spaces in a building), the design of cladding (cladding was not only the construction of the limit, since it qualifies space), etc.

Conclusions

The concepts of space in architecture, as they are used nowadays, have their origin in the 'German tradition' of the second half of the nineteenth century. It is remarkable that a few authors such as Karl Schnaase (1834) did use «innere Raum» (inner Space) and other similar expressions to point out some relevant facets concerning Greek and Roman Architecture. However, it is from Gottfried Semper to Paul Frankl, when an important number of works developed the concept of space as a key one to analyse Architecture and its immanent History, such as the ones written by: Richard Lucae (1869, 1870), Hans Auer (1883), August Schmarsow (1893), Adolf Hildebrand (1893), Gustav Ebe (1900, 1901), Alois Riegl (1901) or Paul Frankl (1914). It was in that period when 'space' became an unavoidable reference to analyse, describe and criticize buildings from a specific architectural approach.

The aim of this paper is to clarify a piece of the 'prehistory' of space concepts in architecture by analysing four translation of Vitruvius into Spanish (1564, 1582, 1761, 1787). As explained above, four meanings of 'space' were founded: 1. Distance between two constructive parts. 2. Area, surface or place required to do something. 3. Volume surrounding an object or the small gap between the building's constructive parts. 4. The enclosed vacuum to dwell.

It can be seen that the word space as distance (S1) and area (S2) has been replacing technical concepts such as the diameter of a column («imoscapo») or intercolumniation.

It is also important to remember that 'space' (S4), the most relevant meaning of 'space' due to its connections with Semper, was used in the translation of Ortiz y Sanz (1787) and Miguel de Urrea (1582), but not in the translation of Lázaro de Velasco (1564), who preferred the word «hueco» (spatial gap), which refers quite to the same idea in Spanish. It is also remarkable that the original version of Vitruvius talks about «spatium habitationis». Thus, the concept of architectural space as an enclosed vacuum to live in appeared even in the origins of Architectural Theory. Presumably, it was only an unconscious idea; but, apparently, its use

³² Semper, *Style in the technical and tectonics arts, or Practical aesthetics*, § 18.

bothered neither Vitruvius nor most of his translators into Spanish. In any case, it is clear that ‘space’ (S4) was then not a key concept to describe architecture.

The concept of space as ‘enclosed space’ turns into an intentional idea only after 1850 and the work of Gottfried Semper. In addition, it was in service of a qualitative description of buildings, as Semper related ‘space’ to other aspects of architecture, such as the structure of the building itself or the cladding design.

Taking into account subsequent German contributions on the matter, which is to say the development of space concepts to accurately analyse the History of Architecture, it may be said that Semper’s contribution was not quite the definition of ‘space’ as an enclosed vacuum itself, but to situate the word and the concept at an important place in his systematic Theory. Something that gave way to analyse and evaluate architecture from spatial terms. How specifically this evolution of ‘space’, from an accepted irrelevance to a nuclear position in Architectural Theory and History, took place remains almost unstudied.

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