Hans Sedlmayr, *The Architecture of Borromini*

Introduced, edited and translated by Karl Johns

Introductory remarks on Sedlmayr's *Borromini*

Die Architektur Borrominis is probably the most ambitious publication from the period in Sedlmayr's career before he achieved his greatest ambition of acceding to the chair at the University of Vienna. It deserves attention since it more tangibly illustrates what he had been calling for in some of his more abstract proposals.[1]

As with much that he published during this period and even later, he saw it as a provisional contribution constantly referring to aspects 'yet to be analyzed' 'studied in sufficient detail' or calling for 'further analysis'. Indeed, he later referred back to this book as an 'Anfängerarbeit'. It was originally intended to be followed by a second volume. Much of his publications seem 'experimental' and written in the form of manifestoes. A mode of analyzing architecture was not easily adaptable to paintings or sculpture. Some of his terms are intended to be more precise than what was then current but are quite vague in their own way. Some of the fundamental proposals can lead to circular arguments such as the necessity of the 'proper disposition'.

The cardinal features of his consistent approach to art as including the 'proper disposition' and the discovery of the 'centre' which allows the only complete 'understanding' of an individual art work or procedure of an individual artist occurs here also in his part 1 chapter 1, part 2, chapter three and section 46.

Hans Sedlmayr had many facets. In a time when formal education taught foreign languages only for reading purposes he spoke the western European languages relatively easily and kept up with the poetry being published then, particularly in English, and also kept abreast of the theoretical publications in the sciences and the other arts such as music.

The problems with some of his conclusions and his often confrontational character should not divert us from many of the insights he provided, some of which can be read clearly in selected essays published throughout his career. These

[1] A list of his publications is available in Friedrich Piel, *Hans Sedlmayr 1896-1984 Verzeichnis seiner Schriften*, Salzburg, 1996. Cogent appraisals have been published by Eva Frodl-Kraft, Hans Sedlmayr (1896 - 1984), *Wiener Jahrbuch für Kunstgeschichte*, 44, 1991, 7-46 and Hanns H. Aurenhammer, Hans Sedlmayr und die Kunstgeschichet an der Universitat Wien 1938-1945, *Kunstgeschichte an den Universitaten im Nazionalsozialismus, Kunst und Politik Jahrbuch der Guernica-Gesellschaft*, 5, 2002, pp. 161-194.

include his essays about the first medieval architectural system, five Roman baroque facades, the façade of the Karlskirche in Vienna and the skin colour in the paintings of Peter Paul Rubens.[2]

Throughout his career, Sedlmayr was typically cryptic in his references to other publications. In both editions of *The Architecture of Borromini*, he mentions Jacob Burckhardt and Wilhelm Lübke in passing, the latter referring to *Die Kunst der Barockzeit und des Rokoko*, Grundriss der Kunstgeschichte 4, printed in many revised editions. 'Brinckmann' presumably means Albert Erich Brinckmann, *Die Baukunst des 17 und 18 Jahrhunderts in den romanischen Ländern*, Handbuch der Kunst-wissenschaft 26, Potsdam: Athenaion published in numerous editions. 'Frankl' presumably refers to *Die Entwicklungsphasen der neueren Baukunst*, Leipzig and Berlin: Teubner 1914 and Berlin: Gebrüder Mann 1999, which has been published in an English translation as *The Four Phases of Architectural* Style, Cambridge: MIT Press 1968 and Spanish as *Principios fundamentales de la historia de la arquitectura*, Barcelona: Gili 1981. His references to Dagobert Frey presumably refer to 'Beiträge zur Geschichte der römischen Barockarchitektur', *Wiener Jahrbuch für Kunstgeschichte*, 3, 1924, 5-113. We follow the first edition but have included the introductory preface and essay from the 1939 edition as an appendix at the end. [The plates to the first edition are available here as a supplementary pdf. The figures have been included in the text at roughly the points where they occur in the original book, not always at the most convenient location for the reader. RW-ed.]

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[2] 'Das erste mittelalterliche Architektursystem', *Kunstwissenschaftliche Forschungen*, 2, 1933, 25-62 reprinted in Sedlmayr, *Epochen und Werke*, 1, Vienna: Herold, 1959, 80-139, plates 15-23; 'Über eine mittelalterliche Art des Abbildens', *La Critica d'Arte*, 1, 1935-1936, pp. 261-269 reprinted in Sedlmayr, *Epochen und Werke*, 1, Vienna: Herold, 1959, 140-154, plates 24-27; 'Fünf römische Fassaden', Sedlmayr, *Epochen und Werke*, 2, Vienna: Herold, 1960, 57-79; 'Die Schauseite der Karlskirche in Wien', *Kunstgeschichtliche Studien für Hans Kauffmann zum 60. Gcburtstag am 30. März 1956*, ed. Wolfgang Braunfels, Berlin: Gebrüder Mann 1956, 262-271, reprinted in Sedlmayr, *Epochen und Werke*, 2, Vienna: Herold, 1960, 174-197 and in Sedlmayr, Rowohlts deutsche Enzyklopädie 71, Hamburg: Rowohlt 1955, 143-152, Mittenwald: Mäander, 1978, 143-152; 'Bemerkungen zur Inkarnatfarbe bei Rubens', *Hefte des Kunsthistorischen Seminars der Universität München*, Munich: Hueber 1964, pp. 43-71, reprinted in Sedlmayr, *Epochen und Werke*, 3, Mittenwald: Mäander, 1982, 165-179; 'Prinzip und Methode der kritischen Formen', Lajos Vayer ed., *Problemi di Metodo: Condizioni di Esistenza di Una Storia dell'Arte*, Atti del XXIV Congresso Internazionale di Storia dell'Arte 10, Bologna: Clueb, 1982, 31-38.

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PREFACE

The present study was begun January 1, 1925 and finally completed in May 1929. Preparations date back to the year 1923.

One section from it and another from the preparation of the 'second approach' are very closely related to one another and have been published with slight changes in the Journal *Belvedere* as 'Gestaltetes Sehen', 1925 no. 40 and 'Zum gestalteten Sehen' 1926 no. 45 [Gestaltetes Sehen, *Belvedere*, 8, 1925, pp. 65-73 and Zum gestalteten Sehen, *Belvedere*, 9-10, 1926, pp. 57-62].

Two shorter essays about more general questions with examples from the work of Borromini shall be published elsewhere.

The 'preliminary theoretical remarks' are fragments from an unpublished theoretical essay 'toward a rigorous study of art'. Readers interested more in conclusions can omit them.

It will undoubtedly later become possible to present the results of this study in a more 'popular' form. There would be 'no sense whatever in attempting to achieve this (popularity) in an initial study where the basic principles must be completely correct'. We must instead separate this study from all else, bring it to completion and deal with the public who might call for a wider appeal at a later time when the project is finished' (Kant).

INTRODUCTION

1.

The following essay toward a Borromini monograph differs from others also by the fact that the goal is not to provide an image of the art and the personality of the artist as it is usually done either consciously or not, but in approaching the subject, or actually the many subjects very vaguely associated with the name of Borromini with certain very distinct questions and provide verifiable answers. (This is not the place to criticize the idolized conception of 'plasticity' in historiography

[3] [Published as *Die Architektur Borrominis*, Munich: Piper 1930.]

which looks for correspondences on surface rather than illuminating the structure of an object). I believe that this is the surest way to avoid straying into literary forms and with the spirit of 'literature' which is a persistent danger for scholarly monographs about artists and often eludes strict verifiability. To provide an image is very indistinct, but to pose and answer meaningful questions is a task sufficiently defined.

Of the many possible questions surrounding Borromini we mention four which taken together would provide the core of a Borromini monograph.
1. What was the function of Borromini's architecture in history?
2. What do the works of Borromini tell us about the structure of his personality? What of its 'development'?
3. What do the works of Borromini tell us about the 'spirit' of the culture from which they emerged? What of the development of this spirit?

They all presuppose an answer to the preliminary question: which works are by Borromini and what is their chronology? For now that has been answered in an excellent way in the book by Eberhard Hempel [Eberhard Hempel, *Francesco Borromini*, Römische Forschungen des Kunsthistorischen Institutes in Graz, Vienna: Schroll, 1924 hereafter as 'Hempel']. On the other hand our question 1 has not been resolved or even posed by Hempel. Several valuable references have been made for the questions 2 and 3 by Max Dvořák, Dagobert Frey, Kurt Cassirer and Erwin Panofsky but no answers found.

All three questions use the works of Borromini to recognize something else through them: they are documents of an historical process, a psychological personality and finally the 'spirit' of a culture. In their artistic content and meaning they themselves only play a certain part – only given aspects are relevant and never their own wholeness. A study of the individual compositions (Gebilde) is a task not merely equally important to the other questions, but indeed an essential prerequisite for a 'good' and correct answer to them. And it has not yet been resolved. Even the best descriptions that have been made to date of individual images almost always only comprehend individual aspects and qualities which the person making them considers to be essential from a certain point of view without being able to demonstrate that they in fact are. Those scholars remaining 'close to the object' find these aspects in an incomplete overall impression of the individual work of art while those geared to concepts ('begriffsscharf') create schemes of qualities in the form of antitheses, usually deductively from a general hypothetical concept, and then force certain reactions from the art work as if they were using red and blue litmus paper. Both procedures are possible and important for a preliminary overview of a great manifold of art works but they do not provide any actual insight into the individual work of art as a dynamic whole. Until we have such knowledge of the individual works however, the results of such comparisons among images (Gebilde) will remain as precarious as their arrangement in 'lines of development' and the historical conclusions drawn from them. The same is true of this as what Wilhelm von Humboldt said about another discipline a century ago: 'What is

particularly lacking in general linguistics is that the individual languages have not yet been understood effectively enough for comparisons to make a difference. It has been considered sufficient to take note of individual grammatical distinctions and compare a relatively large number of individual words. Even a dialect of the crudest conceivable culture however is too noble a work of nature to be broken apart into such random pieces and considered in such a fragmentary form. It is an organic being and must be studied as such'.[4] These shortcomings of our discipline in its current state become appallingly apparent if we imagine by comparison a history of philosophy conceived entirely in terms of the 'history of style'.

There are no precise monographs of works by Borromini which study each individual one in its entire abundance of internal relations and structural rules like a small world unto itself. For this reason, I was forced to begin by making at least sketches of such monographs for the most important works in spite of the fact that the initial result is quite inadequate (unzulänglich genug). With each work, it leads us to a number of ultimate facts no further derivable which can be viewed as primal phenomena of these images (Urphänomene) in Goethe's sense or also as their 'rules'.

The final question being posed in the present study is therefore 4., what are the fundamental facts of Borrominesque architecture?

Each of these had been the guiding questions for individual periods in the study of art since the mid-19th century. The preliminary question which for Borromini had not received its scholarly answer until a relatively late for Borromini (Oskar Pollak 1911 ['Die Decken des Palazzo Falconieri in Rom und Zeichnungen von Borromini in der Wiener Hofbibliothek', *Jahrbuch des Kunsthistorischen Institutes*, vol. 5, 1911, pp. 111-141], Hempel 1924) is the guiding question of the period in art studies devoted to 'stylistic criticism', and our question number 1 belongs to the phase of the 'history of style'. Our second question is the cardinal problem of the 'psychological' period in art studies which, for extrinsic reasons, has in some ways missed its time and was never fully developed although its traces are everywhere apparent. This stage was stunted in its development by the powerful advent of the phase of 'intellectual history' ('geistesgeschichtliche' Epoche) with our question number 3 as its guiding problem, something which reached its zenith in 'Kunstgeschichte als Geistegeschichte', the 'history of art as intellectual history', and is now already in decline. We are convinced that general theoretical confusion, the cardinal question for the coming period will be our number 4.[5] (Behind this, we might also sense the central question for studying art the day after tomorrow, but this is not possible to formulate now with any precision.)

[4] Wilhelm von Humboldt, 'Über das vergleichende Sprachstudium in Beziehung auf die verschiedenen Epochen der Sprachentwicklung', *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin aus den Jahren 1820-1821*, 239-260, reprinted in *Wilhelm von Humboldts Werke*, 4, Berlin: Behr, 1905, 1-34.

[5] The confusion is also characterized by a reinforced reaction in the form a return to the earlier guiding questions.

What developed in an historical sequence belongs objectively together and parallel to one another. Not one of these questions is exclusive or 'proper' in the way it was believed during each of these stages, but objectively they all form an indissoluble unity. We are convinced that the fourth and last has the central place. In assuming its proper place, it should place the other questions within their natural limits which have been repeatedly violated and delineate their actual tasks.

2.

A second leading principle of the present study comes from the need to progress from interesting opinions to firm insights. The answers to the questions posed here should all be rigorously verifiable.

If somebody suggests a different date for a work by Borromini we demand a rational justification for their claim in face of any real or 'methodological' doubts.[6] Justification on the basis of an 'intuition' would not be expected even if the insight was in fact gained by intuitive means. Only when a rational justification is successful can it be seen as a scholarly 'conclusion'. When two claims contradict one another, one of them will be considered incorrect and experiences or logical arguments supporting the one over the other. Meaningless statements are not acceptable. The same demands are accepted in dealing with the attributions of works of art or restoration to their original condition. Even in particular cases where it cannot be easily accomplished, there is a call to replace subjective opinions with objective arguments. The old idol of irrational insights is dying out in the field where these questions are being posed.

On the other hand, even today the procedure is quite different when it becomes necessary to decide between two contradictory descriptions of the same image. In such an instance, the decision is often made in favour of the description appearing to be clearer, more plastic, richer, deeper or more convincing to us. Which characteristics decide and when they are considered to be fulfiled or complete is something which shifts according to the scheme of values or 'world view' of those making the judgments, and is largely guided by the often unconscious desire to find the objects of study as it would appeal to them. In such conditions, general validity or objectivity is precluded from the very beginning although it always hovers before us at least as an ideal.

This is true not merely of descriptions, but also in classifying imagery and making statements about the history which spawned it. Things are slightly better in studying genetic relations (chapter 2 below) and worst when the works are used as documents of the 'personality' or the 'world view' of their author.

This means that while the ideal of strict knowledge (strenge Erkenntnis) and processes that support it have been increasingly victorious in the area of our

[6] Rudolf Carnap, *Scheinprobleme der Philosophie Das Fremdpsychische und der Realismusstreit*, Berlin: Weltkreis, 1928.

'preliminary question', the fields of our other questions are still being handled by the majority of scholars with the 'method of anticipation' (Hegel). There has also been an impetus toward rigor here as well, but it is still very much in the beginning stage. If 'the essential procedure in reconstituting a science as a rigorous one consists in recasting a sense of profundity into clear rational forms' (Husserl), then the predominant mode of dealing with these questions today can only be called pre-scientific at best.

This situation, which strikes us as hesitation before taking a new step forward, can in some sense be sanctioned in saying that rigorous processes only exist with dates, attributions or generally apprizing raw facts on a lower level – while the other, actually important questions cannot be decided here definitely and verifiably, and that it is one of the distinct qualities of this field of study that they cannot. All that can persist here is a sense of 'how I see it' and we are forced to live without such attractive things as decidability, strict progress of precise objective clarification.[7]

It is only possible to confront these opinions with others unless we are able to show how it can be done – which these people seem to doubt without good reason. We undertake to make these questions decidable in a rigorous way and do so incrementally. The present study is a first essay in applying this proposition.

3.

This essay therefore has a double goal. One basic task is to answer the questions that have been posed, and in general of posing meaningful questions capable of being resolved. The other goal for now more important still, is to demonstrate that these questions can be decided in a rigorous way.

The preliminary theoretical remarks at the opening of each chapter relate to one another and are intended to contribute to resolving this second problem. In a usually somewhat sketchy form of stating a thesis, they include both conditions and results of the present study, and we hope to develop them with more extensive explanations in another separate publication. 'It seems to be more easily possible to develop the method on the basis of a concrete problem simultaneously with its solution than to think it out with abstract reasoning'.[8] The 'preliminary remarks' do not serve to display an inadequate knowledge of the relevant theoretical bibliography, but belong directly to the text similar to suggesting a date for a work of art or of justifying a new procedure for arriving at such a date, where announcing the date becomes an actual 'result'. I endear the reader of these theoretical reflections not to refer to earlier theorems with other conclusions, but rather to the

[7] On this, see Max Wertheimer, 'Über Gestalttheorie', *Philosophische Zeitschrift für Forschung und Aussprache*, 1, 1925, 39-60 [reprinted in *Gestalt Theory*, 7, 2, 1985, 99-120].
[8] Hans Reichenbach, 'Metaphysik und Naturwissenschaft', *Symposion*, 1, 2, 1925, 158-176 [available in English in Reichenbach, *Selected Writings*, 1, Dordrecht Boston: Reidel, 1978, 283-297].

objects of discussion themselves. With the single possible exception of chapter 1 (II), these facts and circumstances are not particularly complex or difficult to grasp, and if we were dealing with more familiar objects than art, the truth would probably be more obvious.

In order to make it more apparent that new results can only be found by demanding greater concrete 'depth' in study and verifiability of results I have intentionally not included any new material although it would have been possible, however unnecessary.

The actual body of the study is not intended to provide a final or concluded accomplishment any more than the 'preliminary remarks', but more of an 'initial approach' ('erste Näherung') and calls for supplementation in a second and possibly even a third approach to the material which aside from other preparatory work would require an extensive study not yet available of 16th century architecture in its entirety, and that of the Roman-Hellenistic period in the 2nd century.

FIRST PART
THE CREATIONS OF BORROMINI

CHAPTER 1
STRUCTURAL DESCRIPTIONS

1. Preliminary theoretical remarks

I. Assuming that we have divergent descriptions of a certain object, an art-'work', formed in a certain way - would it be possible to decide which of them is correct? The answer to this question is eminently important since the comparison of creations ('Gebilde') and their order (the comparative study of art), as well as the discovery of the activity giving rise to the creation (the history of art) already presuppose the descriptions of the individual creations. This fact currently provides the greatest obstacle to further progress.

A decision can become possible when the descriptions all refer to the same creation and wish to grasp them in their description. (It remains to be demonstrated how this is possible). Often this is only apparently the case. To begin with, all descriptions are based on the same outward object. This object only assumes certain artistic characteristics when it is viewed in terms of a given system of artistic value and form. When this attitude is changed, so too are the qualities of the object; each of the spectators viewing the same artistic object with a given aesthetic attitude – 'system' – lends it a distinct formulation and revision – ultimately, they are seeing

and describing completely distinct artistic images. It is therefore only natural that their descriptions differ.[9]

As long as the descriptions are not directed to the same artistic image in the strict sense we have introduced here, then there is very little point in declaring one to be more correct than the others; each of these must be judged in relation to the image it seeks to grasp and describe. The first step in arriving at a decision is therefore to decide which form of the given artistic object and which artistic image is supposed to be described. (Each given artistic object disposes over a whole series of possible formal solutions ['Ausgestaltungen'] possible artistic images). It depends on the particular goal of scholarship. For a certain goal it might become significant to view and describe a given work by Borromini as it has been seen by a given art historian of our time. For our purposes we are interested in the peculiar disposition dictating that a certain work by Borromini was given one particular form rather than another; we would like to discover the characteristics which it has in this 'original' disposition, distinguished from all other actual and possible attitudes in that it gave rise to the actual artistic object.

II. A criterion for determining (in the strict sense we have just developed) which of numerous descriptions is correct lies in the fact that this image must fit into a certain historical development at a certain spot. (This spot is determined by the date and attribution to a given 'artistic circle' of varying size such as the oeuvre of a certain artist). As long as one has the idea that the flow of history is chaotic and believes that anything might have happened at any time, then this criterion will be fundamentally inapplicable, and it is practically inapplicable as long as nothing or too little is known of the historical facts or actions – if for instance too few solid dates are available for a given stretch of time. As soon as one has achieved the insight that history has a meaningful course and a meaningful intrinsic structure so that each increment of action has meaning in its most unique state of being in this particular place within the whole, propelled 'necessarily' by a principle of development and structure – then the characteristics of the given image cannot be taken ('seen') to be random, but only so as to fit seamlessly into the structure of the action, understandable as the product of precisely this action at this unique place.

As a condition, this criterion already assumes a knowledge of the historical happening which has led to the artistic image under examination; on the other hand, this insight is gained from a knowledge of the individual images which originally present themselves in isolation. This is not a vicious circle in itself but rather an expression that in all of the study of art these insights support one another reciprocally – like the stone contributing to an arch[10]. In a practical sense this situation is inconvenient. At the moment we are not in a position to devise rigorous processes for conclusively deriving the historical action from the given images. Until

[9] Those to whom this idea does not appear natural should compare the exhaustive treatment of the situation in Gustav Johannes von Allesch, 'Psychologische Bemerkungen zu zwei Werken der neueren Kunstgeschichte', *Psychologische Forschung*, 2, 1, 368-381.

[10] This image might give a sense of why a constructive framework is necessary.

this becomes possible we will not be successful in applying this criterion to the more complicated examples.

In the more crude examples it can nonetheless provide results already now. For example, our historical knowledge is now complete enough to allow us to reject the claim that the images created by Borromini are manifestations of a Romantic conception. Nowhere has it been possible to demonstrate a Romantic conception and relate it to the images. The characteristics we intend to explain can also be easily understood in a way which 'matches' them with other known characteristics at the same historical juncture.

Our knowledge of the actions is furthermore materially faulty by the fact that we still understand the individual images too little. If we had no understanding of them at all, then there could be no history of art, but only a history of shifting individual outward appearances. When taken to an extreme, the history of style might appear confoundingly similar to this historical fiction which has not understood its objects impartially. To make this clear one should imagine a history of machines which does not understand the function or the construction of these items, but only considers their 'style'. In such a case, it would still be possible to derive dates and make attributions, but a true history would not.

III. This leads us to the task of understanding the individual image. This is oddly wedded to the task of description. 'If I have no understanding of a motor or of the function and relation of its parts, then all I will see is confusion, or at best a sum of rectangular and round parts. In such a case, a description is either completely impossible (amid the 'confusion') or only in terms of a listing of parts and therefore only partial characteristics. Such a description would be as bad as such perception. Juxtaposed to this, there is another form of description which aptly treats the function with the relations among the parts, and corresponding to this a formative view of the structure ('gestaltetes Sehen des Gebildes') providing not merely the basis for such a description, but which can also become its condition'.[11]

This leads us to a criterion of another kind for descriptions – we shall prefer those which provide a better understanding of the image, and which another description was left to simply accept. This decision emphasizes another characteristic of these descriptions, different than in the first case – it does not decide in matters of correct and incorrect, but of quality and lack of quality. Aside from the other, this distinction also includes another significance of its own – it is a cardinal goal of research to arrive at continually 'improved' descriptions; if correct descriptions were all that mattered, then the task of research would be easily satisfied, but the success would be completely unsatisfactory. A description might after all consist of completely correct observations and yet say nothing whatsoever, not characterize any essential qualities of the image in question.

[11] Ernst von Aster [Geschichte der neueren Erkenntnistheorie (von Descartes bis Hegel)], *Annalen der Philosophie*, 3, 1921, in a report about the fundamental book about these questions, Kurt Koffka, 'Zur Theorie der Erlebnis-Wahrnehmung', *Annalen der Philosophie*, 3, 3, 1923, 375-399.

For us the question arises at this point – can this criterion be used to replace the first? Are there instances in which the better description will be identical to the correct description?

IV. It would be such a case if we were certain that a conception of the image in which the meaningful qualities of the image approach an optimal state and could be equated with that 'original' disposition which gave rise to the material artistic object. This phase, this 'condition' of the image in its state of becoming when the artist impresses the image in their mind onto the physical material, must distinguish itself from the previous states with qualities prescribing the formal process to culminate in this particular way. In this state, the image is as 'good' as possible and its meaningful formation has been optimally achieved. Viewed in this way, a description can be considered to be the proper description when it renders the largest possible amount to be meaningful and understandable. Of course this is only true when applied to the description of finished images and the determination of their 'original' character.[12]

One might object that it is theoretically possible to have an incorrect understanding. In theory, one cannot discount the possibility that an image might be misunderstood in every stroke, every part and every relationship, and that an incorrect meaning is attributed to every part and every structural relationship. There are similar phenomena in our quotidian lives when in hearing a report or observing a person we incorrectly 'interpret' every single 'part' of our perception in the very act of perception. It is possible to arrive at two descriptions for the same objective characteristics of an artistic object in different ways according to differing structural principles – as if each were describing a separate highly developed image. In such a case one would be forced to return to the first criterion.

In practice, the danger of an incorrect understanding only then becomes serious when we are limited to just a very few qualities or when the image is itself quite simple. As the structure becomes more complex and more of it becomes visible, then the possibility of a misunderstanding persisting without force also becomes much smaller. After all, the same is also true in the example from our daily life – it is all the easier to misunderstand something, the fewer the sentences we have heard; the more one hears, the more likely it becomes that a misunderstanding will no longer be viable at a particular spot, reach an impasse and reverse itself into a proper understanding.

If this is recognized, then the second criterion can take the place of the first in practical research, and the latter remain as a last resort. This has the advantage in allowing the contemplation of individual images to permit decisions between contradictory viewings and alternative descriptions without the necessity of researching the historical occurrences.

[12] Other processes are required for the descriptions of unfinished images. See section 7 below.

V. The earliest beginnings for a 'good' description of the images of Borromini were provided by Cornelius Gurlitt and Albert Erich Brinckmann. For instance, Gurlitt sought for a positive explanation of the function of the columns in S. Carlo alle quattro fontane. He saw them as 'ornamental aids' arrogated by a primary intention for a mood effect – 'whether a shadow or protrusion is necessary at this spot or another' – calling for their presence and precise placement within the whole. Even in an isolating view, this explanation proves itself to be wrong for S. Carlo, but it nonetheless presents an attempt to explain characteristics of the image in terms of a structural principle, however much it might lack in concreteness. Brinckmann provided a theory concerning the relationships between the spatial forms which he felt to contribute to the space of S. Carlo. It is also untenable, but a 'constructive' error. One might for instance compare this to the description given by Wilhelm Lübke, who was not able to recognize anything other than an appealing jumble.

A further important fact emerges from these descriptions. A single structural principle is not sufficient for the description of an image. One principle is necessary for the relations among the parts of the spaces and another to explain the placement of the columns and still others for the derivation of further facts. Each such structural principle corresponds to a 'level' of meaningful relations within the image. Further experience reveals that all of this is typical for all artistic imagery; one might recall better known relations in the field of music between 'rhythm', 'melody', 'harmony' etc., which provide relatively independent levels of meaning – as grasped by a pre-scholarly experience. In researching individual works of art, the empirical recognition of 'natural' layers is of decisive importance – it allows us to limit the descriptions of images to descriptions of individual layers. This would not be possible if all parts of an artistic image related to all others equally firmly – as many still believe by way of an analogy from a Romantic conception of nature. Research of such imagery would then be significantly more difficult.

In this section we make the attempt to describe a single isolated artistic image. Since it is the goal of our publication in its entirety to arrive at a theory about the art of Borromini, the choice of this example cannot be random. Our choice is determined by a theory as to which works are essential. We here anticipate this theory which shall only be fully developed later on.

For other reasons, one is tempted to choose a comprehensive and self-enclosed image, such as the convent of S. Carlo for instance. We shall see however that these images present very particular difficulties for a purely structural description. For this reason we choose the church of S. Carlo alle Quattro Fontane, which is generally recognized as an important work of Borromini.

We shall not pursue the description as far as it would already be possible, but will limit ourselves to recognizing the structure on the large scale (the macrostructure). The description of an individual image is not an end in itself, but provides the means to answer – and to understand – a number of questions. In a first approach to this, it suffices to determine the 'grand' form. In our second

approach to the architecture of Borromini we must then proceed to a determination of the 'details' and the fine structure of the imagery. Only then will it become possible to consider the question of the 'expressiveness' in greater detail – which can only be touched on here. The expressiveness of an image varies quite strongly according to its finer structure and the outermost layers of the image. One should think of the expression of a human face and the part played by frame and the detail.

One thing in conclusion: our essays in describing individual images do not provide a guide for a penetration into them but are the result of such a penetration – and this is equally true of our later description of the architectural 'world' of Borromini. A pedagogical introduction to the study of this architecture would be a completely different task.

2. San Carlo alle Quattro Fontane Basic Form and Structure

1. A description of the basic form of the space of S. Carlo is where we begin our description of the total image, but is not at all that with which we begin our view of the image. Our viewing begins with a chaotic overall impression including more specific individual impressions anchored within it. A certain structure ('Gliederungen') and relationships only appear later to lead the way out of this chaos, while the individual details assume an ever firmer place – and the image emerges. Even then, the basic forms still remain hidden below the given structures, and in the case of San Carlo alle Quattro Fontane this is so strong that they have still not been properly recognized and described.

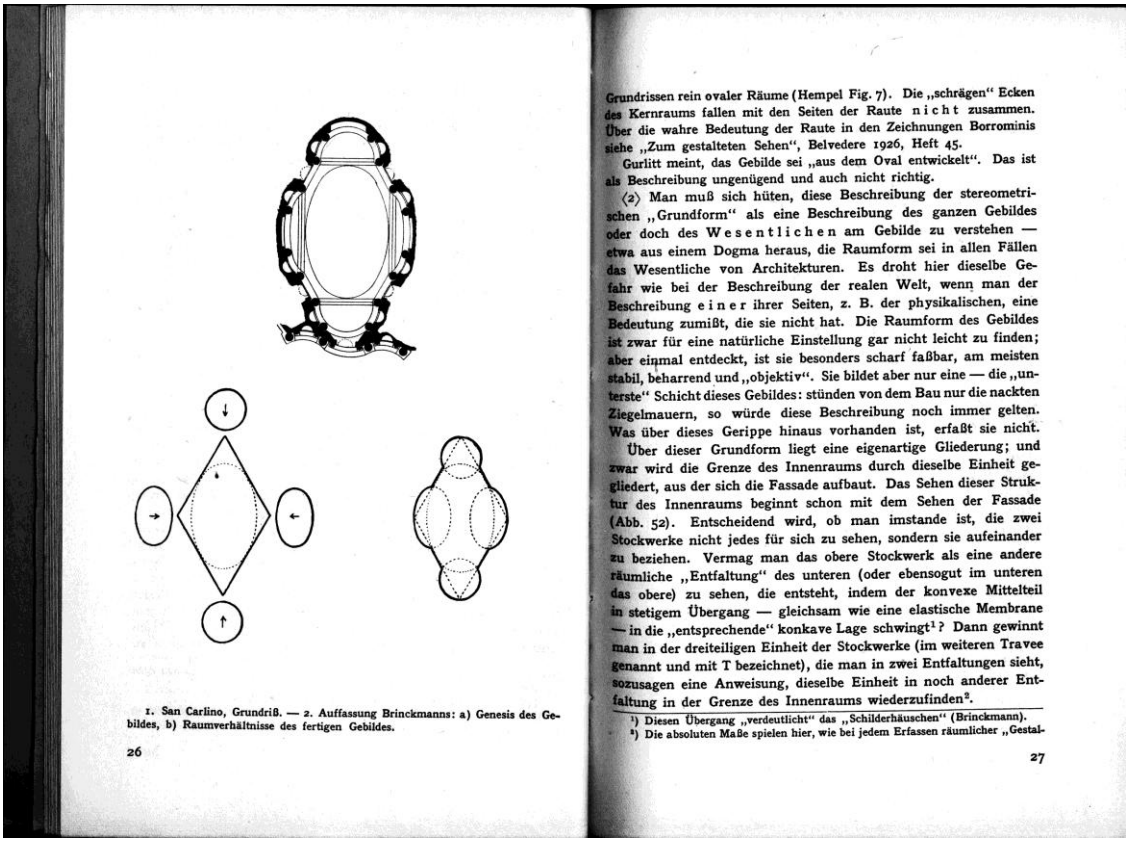
In spite of this it is actually quite simple – the space is a rectangular prism with blunted corners, and sides opening with strained arches.[13] On the long axis the arches are semicircles opening onto domed niches (apses) with semicircular ground plans. The arches on the short axis are segments of ovals opening onto flat apses with segmented ovals as their ground plan. The arches bear a massive oval cupola with spherical trapezoid pendentives resting on the 'blunted corners' of the rectangular prism. Vertically, there are three strictly separate zones – that of the columns, that of the cupola, and the intermediate zone composed of the arches, the partial vaulting and the pendentives. A fourth would be the completely separate lantern (Hempel, fig. 15).

As far as one can tell, critics have never arrived at this description of the basic form. In the available ground plans, there is no indication of the vaulting which might have illuminated things.[14]

These flawed ground plans explain the reading given by Brinckmann, which is incorrect, but provides a 'good' mistake in relation to the earlier descriptions. Brinckmann described the spatial form as a rhombus (actually prism with a

[13] We choose the term prism because it simplifies the description in a purely technical way. It would be more proper to say 'an octagonal prism with uneven sides and angles'. This spatial form is genetically derived from a regular octagon with a circular cupola.
[14] Cf. the ground plans published by Gurlitt, Lübke and Hempel, fig. 5.

rhomboid ground plan) with its 'points' clipped by two pairs of ovals (cylinders on an oval ground plan).[15] This conception is not derived from the image itself, but is transferred from observations which Brinckmann made of certain works of Guarini. The description by Brinckmann would be acceptable if the vaulting of the spatial bodies whose interpenetration is taken to have created the form cut into one another – if the image appeared as in our figure 2 b. (This is a typical structure of imagery by



1. San Carlino, Grundriß. — 2. Auffassung Brinckmanns: a) Genesis des Gebildes, b) Raumverhältnisse des fertigen Gebildes.

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Grundrissen rein ovaler Räume (Hempel Fig. 7). Die „schrägen" Ecken des Kernraums fallen mit den Seiten der Raute nicht zusammen. Über die wahre Bedeutung der Raute in den Zeichnungen Borrominis siehe „Zum gestalteten Sehen", Belvedere 1926, Heft 45.

Gurlitt meint, das Gebilde sei „aus dem Oval entwickelt". Das ist als Beschreibung ungenügend und auch nicht richtig.

〈2〉 Man muß sich hüten, diese Beschreibung der stereometrischen „Grundform" als eine Beschreibung des ganzen Gebildes oder doch des Wesentlichen am Gebilde zu verstehen — etwa aus einem Dogma heraus, die Raumform sei in allen Fällen das Wesentliche von Architekturen. Es droht hier dieselbe Gefahr wie bei der Beschreibung der realen Welt, wenn man der Beschreibung einer ihrer Seiten, z. B. der physikalischen, eine Bedeutung zumißt, die sie nicht hat. Die Raumform des Gebildes ist zwar für eine natürliche Einstellung gar nicht leicht zu finden; aber einmal entdeckt, ist sie besonders scharf faßbar, am meisten stabil, beharrend und „objektiv". Sie bildet aber nur eine — die „unterste" Schicht dieses Gebildes: stünden von dem Bau nur die nackten Ziegelmauern, so würde diese Beschreibung noch immer gelten. Was über dieses Gerippe hinaus vorhanden ist, erfaßt sie nicht.

Über dieser Grundform liegt eine eigenartige Gliederung; und zwar wird die Grenze des Innenraums durch dieselbe Einheit gegliedert, aus der sich die Fassade aufbaut. Das Sehen dieser Struktur des Innenraums beginnt schon mit dem Sehen der Fassade (Abb. 52). Entscheidend wird, ob man imstande ist, die zwei Stockwerke nicht jedes für sich zu sehen, sondern sie aufeinander zu beziehen. Vermag man das obere Stockwerk als eine andere räumliche „Entfaltung" des unteren (oder ebensogut im unteren das obere) zu sehen, die entsteht, indem der konvexe Mittelteil in stetigem Übergang — gleichsam wie eine elastische Membrane — in die „entsprechende" konkave Lage schwingt[1]? Dann gewinnt man in der dreiteiligen Einheit der Stockwerke (im weiteren Travee genannt und mit T bezeichnet), die man in zwei Entfaltungen sieht, sozusagen eine Anweisung, dieselbe Einheit in noch anderer Entfaltung in der Grenze des Innenraums wiederzufinden[2].

[1]) Diesen Übergang „verdeutlicht" das „Schilderhäuschen" (Brinckmann).
[2]) Die absoluten Maße spielen hier, wie bei jedem Erfassen räumlicher „Gestal-

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1 San Carlino, Ground plan – 2. Interpretation by Brinckmann, a: Genesis of the image b: spatial relations to the final design.

Guarini). At San Carlo however, the central space has a separate and complete vaulting of its own and its expansions consist merely in semi-bodies pushed on additively. In the drawings of Borromini there is no reflection of the imaginary act posited by Brinckmann. There is in fact a rhombus to be found among the ground plans of Borromini – as Brinckmann has incorrectly supposed it to form the primary element of spatial form – but this also occurs in the ground plans of purely oval spaces (Hempel, fig. 7). The 'angular' corners of the core space do not coincide with the sides of the rhombus. For the true significance of the rhombus in the drawings of

[15] He also assumes certain relations between these ovals. We shall return to this in our 'second approach.'

Borromini, see Hans Sedlmayr, 'Zum gestaltenden Sehen', *Belvedere Kunst und künstlerische Kultur der Vergangenheit Zeitschrift für Sammler und Kunstfreunde*, 9-10, 3, 45, March 1926, 57-62.

Gurlitt believed that the image 'is developed from an oval'. As a description, this is insufficient and incorrect.

2. One must be careful not to identify this description of the stereometric 'basic form' with the entirety of the image, or as the essential quality of the image – from a dogmatic view that the spatial form is in any case the essential aspect of architecture. The same danger looms here as in the real world, where a one-sided description, such as one exclusively in terms of physics, should not be considered to be the only meaningful possibility. Within our natural disposition, the spatial form of this image is not simple to discover; yet once it has been recognized, one grasps it quite clearly, as not stabile, persistent and 'objective'. However, this presents only one layer of the image – its 'lowest': if nothing stood beyond the bare brickwork, this description would still be valid. It does not capture what goes beyond this skeleton.

There is a remarkable structure overlaying this basic form; the borders of the interior space are structured according to the same units used in constructing the facade. Our vision of the structure of this interior space begins with our view of the facade (fig. 52). It is decisive not to view the two levels separately, but to relate them to one another. Is it possible to recognize the upper level as a different spatial 'unfolding' of the lower (or the lower of the upper for that matter), resulting from the convex centre steadily transforming into the 'corresponding' concave position – something like an elastic membrane?[16] Then the three units (bays – to be abbreviated T for travée) which we see in two variations provide us with 'directions' for recognizing the identical unit in other versions around the border of the interior space.[17]

In the interior, the 'formative view' is first confronted with the four niche walls (to be abbreviated N) as equal in value b their completely identical articulation, divided by columns, coffering, entablature (Hempel, fig. 36)[18]. Its differing form, between deep and shallow, semi-circular and oval, is perceived as nothing more than a difference in the development of one and the same 'gestalt'. Concretely: it is possible to conceive the limits of the deep niche N1 as 'bent open', or 'coiled' or more succinctly relaxed like a spring until they reach the border of the

[16] This transition is 'clarified' by the motif of the small 'sentry box' (Brinckmann).

[17] As in the apprehension of all 'gestalt,' the absolute measurements are inconsequential. Even shifts in proportion do not make a difference if they do not go beyond a certain range. 'Each "gestalt" possesses a certain possible variability (logical "range") without losing its character' (Max Wertheimer).

[18] To attribute an effect of an illusionistic expansion of the space to the coffering (as done by Hempel) is completely impossible according to the nature of perspective phenomena. To attribute such an effect to the coffering in the niches N1 would by extension make the same claim for that in the Pantheon.

shallow niches; and vice versa.[19] At the same time one 'understands' that this dis-equal value depends on the uneven weight assigned to the sides of the rectangle to which the niches are attached. 'If this were a square, then the niches would also all have the same depth and their outlines would curve equally'. At this stage, the 'blunted corners' between the niches appear simply as 'links' and 'dead' intervals as opposed to the 'firmer' and 'more vivid' fields of the forms of N1 and N2 (ground plan fig. 4).

This conception is already criss-crossed with and gives rise to another. Since the central fields of the niches are completely filled with dark images, the edge of the space between them yields new forms – the bright tri-partite sections emphasized in fig. 55 by their direction of view. Their lateral fields are concave with niches placed high in all three fields, and a door with a straight beam below the niche of that in the centre.[20] In spite of the fact that the lateral fields here are lightly backward bent (beginning at an angel from the central field) and the central field is neither concave nor convex but flat, one recognizes these persistent impressions to involve a variant (T1) of the unit of the facade T. (A viewer recognizing the transition from concave to convex within the facade will already be aware of this development of the central field). Now the border of the space is composed of four units T3, and the dark fields in the main axes appear as simple links or dead intervals.[21] The facade and the interior are seen to be composed from the same motif – the exterior becomes the interior, the interior exterior....when our gaze rises from the 'bays' to the section leading into the vaulting, the unity we have apprehended below divides itself once more. The vaulting of the lateral fields T3 forms a part of the unified niche vaulting and therefore leads back to the fields N1 and N2 and the very point from which the process of the imagination had begun.

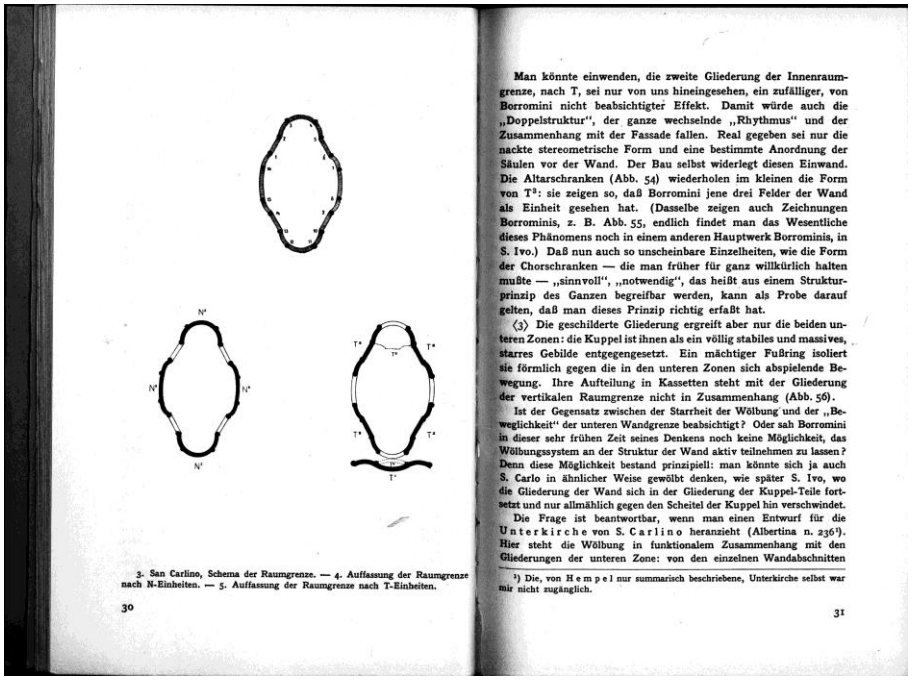
In the more trivial stereometrical structure of naked form, one therefore finds two possible conceptions of the structure superimposed one over the other, as can better be conveyed by the schematic ground plans of fig. 4 and 5 than in words. Depending on our 'disposition', either the one or the other connection will emerge – either the sections N1 and N2 form the basic unity ('gestalt' in the strict sense) and the central fields T3 have the character of intervals, or else the sections T3 yield the basic structural unity and the central fields N assume the character of intervals. These possibilities reach one above the other in the way that certain patterns can be

[19] One should note that in doing so one relates niche-borders with one another and not the far stiffer spatial forms of the niches. These appear as a 'dependent variable' in the particular presentation ('Entfaltung') of their border.

[20] These last two characteristics are intended only to aid in the identification, and vary in themselves.

[21] One tends to view these separately from the sections N (fig. 54), since they are emphasized by independent tops (pediments).

subjectively re-accentuated so as to create that complicated 'rhythm' and richness of relations which has been correctly observed about this building.[22]



3. San Carlino, Schema der Raumgrenze. — 4. Auffassung der Raumgrenze nach N-Einheiten. — 5. Auffassung der Raumgrenze nach T-Einheiten.

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Man könnte einwenden, die zweite Gliederung der Innenraumgrenze, nach T, sei nur von uns hineingesehen, ein zufälliger, von Borromini nicht beabsichtigter Effekt. Damit würde auch die „Doppelstruktur", der ganze wechselnde „Rhythmus" und der Zusammenhang mit der Fassade fallen. Real gegeben sei nur die nackte stereometrische Form und eine bestimmte Anordnung der Säulen vor der Wand. Der Bau selbst widerlegt diesen Einwand. Die Altarschranken (Abb. 54) wiederholen im kleinen die Form von T^3: sie zeigen so, daß Borromini jene drei Felder der Wand als Einheit gesehen hat. (Dasselbe zeigen auch Zeichnungen Borrominis, z. B. Abb. 55, endlich findet man das Wesentliche dieses Phänomens noch in einem anderen Hauptwerk Borrominis, in S. Ivo.) Daß nun auch so unscheinbare Einzelheiten, wie die Form der Chorschranken — die man früher für ganz willkürlich halten mußte — „sinnvoll", „notwendig", das heißt aus einem Strukturprinzip des Ganzen begreifbar werden, kann als Probe darauf gelten, daß man dieses Prinzip richtig erfaßt hat.

〈3〉 Die geschilderte Gliederung ergreift aber nur die beiden unteren Zonen: die Kuppel ist ihnen als ein völlig stabiles und massives, starres Gebilde entgegengesetzt. Ein mächtiger Fußring isoliert sie förmlich gegen die in den unteren Zonen sich abspielende Bewegung. Ihre Aufteilung in Kassetten steht mit der Gliederung der vertikalen Raumgrenze nicht in Zusammenhang (Abb. 56).

Ist der Gegensatz zwischen der Starrheit der Wölbung und der „Beweglichkeit" der unteren Wandgrenze beabsichtigt? Oder sah Borromini in dieser sehr frühen Zeit seines Denkens noch keine Möglichkeit, das Wölbungssystem an der Struktur der Wand aktiv teilnehmen zu lassen? Denn diese Möglichkeit bestand prinzipiell: man könnte sich ja auch S. Carlo in ähnlicher Weise gewölbt denken, wie später S. Ivo, wo die Gliederung der Wand sich in der Gliederung der Kuppel-Teile fortsetzt und nur allmählich gegen den Scheitel der Kuppel hin verschwindet.

Die Frage ist beantwortbar, wenn man einen Entwurf für die Unterkirche von S. Carlino heranzieht (Albertina n. 236[1]). Hier steht die Wölbung in funktionalem Zusammenhang mit den Gliederungen der unteren Zone: von den einzelnen Wandabschnitten

[1]) Die, von Hempel nur summarisch beschriebene, Unterkirche selbst war mir nicht zugänglich.

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3 San Carlino Scheme of the spatial borders – 4. Conception of the spatial limits according to the N-units – 5. Conception of the spatial limits according to the T-units.

One might object that we have ourselves interpreted the second structure of the interior bordering space T into the image and that this is a coincidental effect not intended by Borromini. This would further negate the 'double structure' and the entire alternating 'rhythm' and the connection to the facade. All that is in fact given is the naked stereometrical form and a certain order of the columns before the wall. The building itself refutes this objection. The altar screens (fig. 54) repeated the form of T3 in a smaller form – which proves that Borromini saw those three fields of the wall as a unity. (This is also visible in drawings by Borromini, such as that illustrated in fig. 55, and then the essence of this phenomenon occurs once more in another main work by Borromini, the Church of S. Ivo). Since such inconspicuous details as the form of the altar screens become 'meaningful' and 'necessary' possible to apprehend as part of such an encompassing structural whole, this might be taken as an indication that we have properly recognized the principle.

3. However, the structure as we have described it is only present in the two lower zones – the dome is juxtaposed to them as a completely stabile, massive and rigid image. It is quite plainly isolated from the movement within the two lower

[22] There is a 'turning' effect as we shift from one viewing to another so that the structural units lie either along the main axes of the space or between them on the 'diagonals'.

zones by a massive ringed pedestal. Its division into coffering bears no relation to the structure of the vertical spatial limit (fig. 56).

Is the juxtaposition intentional between the stiffness of the vaulting and the 'movement' of the lower walls? Or did Borromini not find any way of integrating the system of vaulting into the mural structure at this early phase in his career? Technically, this would be conceivable. It is possible to imagine S. Carlo with a vault more like that of S. Ivo, where the articulation of the wall is continued in the structure of the parts of the dome and only slowly disappears toward the top.

It is possible to discover an answer to this question if one consults a design made for the basement level of S. Carlino (the drawing Albertina Inv. 236).[23] In this, the vaulting is related functionally to the articulation of the lower zone, lunettes emit from the individual sections of wall and generate 'struts' corresponding to the 'parts' of the wall – similar to way one can later see them in the Church of the Collegio di Propaganda Fide. In the upper church, the dome consists of a single oval shell, covered only on its surface by actively channelled detailed forms (fig. 56). The contrast between the stiff basic form of the dome and the unstableness of the lower zones should be seen in positive terms. In the other work of Borromini, such contrasts did not occur and the structure is more unified. In this sense, the Church of S. Ivo is yet more typical for Borromini than S. Carlo, but lags behind it in a different way – the facade of S. Ivo bears no relation to the interior space and this eliminates a part of the phenomena we have been discussing. This 'whatever is within is without' is an idea only to have emerged in the later work of Borromini when this facade was attached to this interior space and interpreted in a new way. The fact that this idea could –coincidentally – have been realized in the uncompleted first work lends it its singular significance.

4. Aside from the rough shapes of the walls, we have also made a rational reconstruction of the spots where the columns have been installed. Beyond this, there is still an endless amount to be rationally understood from this. At this point, let us limit ourselves to the explanation of only one thing – why were columns chosen rather than pilasters as elements engendering the structure? Was this simply because the 'expressive content' of the columns is different and they 'boom out' more strongly? Or was there some other reason?

To arrive at a correct answer one must first pose the question – is it possible to simply replace columns with pilasters without losing something essential of the intended structure? On the face of it, columns and pilasters are of completely equal value – at least to the extent of the basic structure as we have been analyzing it; one replaces each column with a pilaster and there is – apparently – no fundamental change. This is nonetheless incorrect, and proof can again be found in the design for the lower church. Up to the height of the main entablature, the 'bare' basic form of the space is completely like that of the upper church except that it is 'instrumented'

[23] Hempel has only described the subterranean level in a very cursory way and I have not myself been able to see it.

with pilasters rather than columns. If each column were simply to be replaced with a pilaster, then it would be necessary to use broken pilasters at those points were the sections of the walls meet in the basic form – as 1, 2-5, 6-9, 10-13 and 14 of the summary sketch fig. 3. This in itself would not be impossible, Bramante had already used broken pilasters, and Borromini also used them in the contemporary facade of the Casa dei Filippini. Yet this causes the sections of the walls to grow together in an altogether different manner than if there were a column at the same point. The column can be related to the one as well as to the other; the pilasters interlock them both. This would prevent a reading according to the N-units since the N-units would now end in a half-pilaster each and would to a certain extent reach around the corner into the 'dead' interval.

In the lower church Borromini did not use any broken pilasters at the relevant spots, but rather doubled the pilasters. This is another way in which the upper church forms a complete departure. The sections corresponding to N and T in the upper church are no longer of the same value or transformable into one another. Here the section N consists of P-P – P-P (if P stands for a pilaster and the hyphen for a space in the wall), while the section T is made up of P-PP—PP-P. In our apperception after N, the 'dead' intervals receive a completely different value since they are also framed (by one pilaster each). A paradoxical effect therefore arises from the introduction of pilasters and the concomitant increase of ordering units in the articulation of the wall, which on the surface might be seen as an enrichment of the structure – it destroys the basic structure and shrinks the richness of the internal relationship, rigidifying the image.

One can see that the choice of a column instead of a pilaster is also dictated and comprehensible according to the idea of the grand structure.

5. To summarize: 1. The entire intensive articulation (structure) is based on units (the tri-partite sections of T and N). These units are surface-bound in their character, which expressed simply, do not have a reverse side. One should imagine it without the articulating columns and the coffering and transepts which accentuate the same things – and this would annihilate the articulation at once! If one were to imagine the columns placed differently within the two semi-circular niches! and the 'structure' and the 'rhythm' would be gone.[24] This reveals the basis within units. They are ultimate units of this image, and when they are further divided – which is in itself still possible, then the intended and reasoned articulation is lost.

2. The 'units' are not rigid, but conceived as moveable and variable; their mobility expresses itself through the imagery which they themselves articulate. 'Mobility' must be understood to mean that the various bending bays and fields of niches do not appear as fixed and unique unchangeable forms, but rather as

[24] Assuming that the columns in the oval niches are not also adjusted concomitantly. Even then the shift would only be possible within the objectively fixed minimal limits of the structural principle. This is something which should be recognized before speaking of randomness, or as Gurlitt says: 'entire orders are distributed across the wall surfaces according to decorative rules'.

'derivations' ['Entfaltungen'] of the form of N (or of T), variants of one another, transforming into one another and ever changeable.

More strictly: the individual form such as T3 or N2 is not conceived in isolation, but rather as one among many possible representations of a gestalt-type (T, N) in the sense we have used it above. To conceive them in one way or another not merely characterizes two very different modes of thinking in this field, but the individual form (T3, N2) also 'appears differently' each time, either 'rigid' or 'potentially in motion' (pointing beyond itself).

An example: the facade and its relation to the articulation of the interior only includes the unit T3 as one among other possible variants and evokes images also consisting of four T-elements in this particular concatenation with concave or convex rather than flat central fields. This confirms that we are not freely fantasizing here, but that these were the thoughts of Borromini, and that such images as we have derived them here in some sense 'a priori', indeed occur among the designs by Borromini (Hempel, fig. 9, 45 and 46).

It would be equally possible to imagine the second variation of N2 and N1 in a different form; this would make the appearance of the church of S. Carlo only one case among a multiplicity of possible images.

3. The phenomenon of double structure. The kernel of this phenomenon is in dissecting the 'natural' enclosure of the whole image (here the interior of S. Carlo) with each of the two possible conceptions including a separate unity (a different quality) as constitutive.[25]

A simple example from 'elementary' geometry can illustrate the significance and the consequences of this. One might conceive a square as a 'particular' form, and then it will stand in isolation without a relation either to the type of 'rectangle' or that of 'rhombus'. Yet it can also be conceived (or 'defined') as an 'equiangular and equilateral' parallelogram; in this way it is divided between two complexes of characteristics each of which exist separately, and are only unified in the 'square' by the word 'and'. When viewed as an equiangular parallelogram it presents an individual case among the 'set' of equiangular parallelograms, which would be the 'rectangles'. Within the 'set' of equilateral parallelograms, these would be the 'rhombi'. In this definition, it is both a rectangle as well as a rhombus, providing something of a 'bridge' between the two.[26] A second (abstract) connection emerges between these two forms which stand separate in the original conception (which appears as the more 'natural'). These two conceptions are characteristic as certain modes of thought in this field. Our case apparently belongs to the latter.

One visually dissolves the enclosed image of the wall articulation in seeing it (visually 'defining' it in some sense) as four T-images followed by four N-images

[25] This dissection is not merely possible, but in fact necessary to arrive at an adequate disposition. The image itself forces this disjunction. Its complete meaning only unfolds with it and through it, and this for instance is what makes the connection between the facade and the interior necessary.

[26] Set theory would refer to this as the 'average of two sets'.

(fig. 4); both are true, one as well as the other. One expects that in such an abstract way of thinking, the forms which have nothing to do with one another homogeneously (in terms of 'gestalt' ['gestaltmäßig']), would in a specific arrangement appear to be connected semi-logically and interflow in a strict way.[27] In surveying the entire œuvre of Borromini, this is in fact a striking characteristic.

We have considered the image of this church in isolation on its own terms; it does in fact comprise an independent subsidiary whole within the architecture of the entire abbey. This would be the point to continue with an analysis of this encompassing building which by its bare rectangular wall surfaces distinguishes itself so starkly from the opulent articulation and curves of the church. A purely structural analysis of this complex provides particular difficulties themselves related to the 'essence' of such images. Its peculiar structure – and particularly its achievement - can only be completely understood once the concrete conditions are known according to which this structure came about. For this reason, the analysis of this building complex will be referred in the following genetic descriptions.

3. Latent structure

6. It is possible for images to distinguish themselves in ways other than what is immediately perceptible – they possess a 'latent structure' not expressed in its physical forms.

For example, an image such as the design for a circular temple by Polidoro da Caravaggio, which Cassirer has published, distinguishes itself first of all from the lantern designed by Borromini for the Church of S. Ivo (fig. 60) in the way described by Cassirer. For Borromini, the lantern of S. Ivo possessed characteristics which are immediately discernible. We can ascertain this from the fact that Borromini divided this image into subsidiary parts which led him to derive separate designs, such as one of the niches for S. Giovanni (section 20 below). This reveals that he conceived it as potentially divisible and constructed from such subsidiary parts. Such a characteristic as potential divisibility also belongs to a good description of the image before Borromini as well as of the qualities we actually see.

Aesthetically, this is also quite essential. It causes a change in the expressiveness (the intention) of the image.[28] In expressive terms, an image with these characteristics is quite distinct from the same image seen as a compact form.

The morphological and comparative study of art has primarily attended to the immediately available 'objective' qualities of the artistic images; aside from this, it will most necessarily be required to also study those qualities inherent in an image when it is viewed in a particular way differing from our own habits. Such a disposition can be determined in a completely rigorous way. Whenever an effort is

[27] The conditions of the transition are given by the 'intrinsic structure' ["innerer Bau"]. By contrast, one can think of the interpenetration of dream imagery.

[28] This in the sense of that term as used by Gustav Johannes von Allesch, 'Die ästhetische Erscheinungsweise der Farben', *Psychologische Forschung*, 6, 1925, 1-91, 215-281.

made to penetrate the thoughts of an artist more deeply, it is impossible to avoid recognizing such things. It can also lead to an understanding of further phenomena (to be discussed below).

7. This gains great importance in describing uncompleted images and designs. In its process of formation, the image might have changed characteristics which are not yet outwardly visible – in the objective form. (When such characteristics are not considered, then there will be a misunderstanding of the process producing the finished image). Independent methods can be developed for recognizing these latent characteristics. By placing an image within a genetic sequence it becomes theoretically possible to derive the latent structure from the unfolding structures.

For Borromini, the oval design of S. Carlino contained a principally very similar structure to the later designs which drawings show Borromini to have conceived as including walls consisting of relief units; this was also composed of bays in an arrangement very similar to the late designs. This must be our conclusion, because it would otherwise not be possible to understand how Borromini could have conceived the subsequent designs as variations of this; it is expressed by the fact that he drew them on top of the oval design (on the drawing Hempel, fig. 9) with each element of the oval design strictly corresponding to elements of the two following designs. Our conception is further confirmed by other cases where things occur with the images only possible if Borromini had viewed them in a way which does not leave a trace in their given objective appearance. In recognizing the existence of latent characteristics generally, many things become perceptible and meaningful which would otherwise have remained unintelligible.

What we have emphasized here is ultimately only natural when one assumes that certain characteristics in images only become available through a given aesthetic system. Then the hidden characteristics can be ascertained as rigorously as those which are visible. Images which are typical for a given system distinguish themselves from others in that they manifest a completely developed structure which had only been latent in its less typical examples.

CHAPTER 2

GENETIC DESCRIPTIONS

1. Prefatory theoretical remarks[29]

VI. We do not inquire as to how the images are to be imagined as having been made, but instead how they actually did come about. There are many ways of

[29] On this section, cf. Kurt Lewin, *Der Begriff der Genese in Physik, Biologie und Entwicklungsgeschichte Eine Untersuchung zur vergleichenden Wissenschaftslehre*, Berlin: Springer, 1922.

imagining the genesis of an image, but there is only one which was actually the case. This must be discovered in each example.

VII. In this section, we shall be making genetic descriptions of images – forms – by Borromini and parts thereof. Such a derivation of images and forms provides no determination of the source in an earlier 'conception' – our present term would be artistic system – for Borromini's conception or 'system'.

To study the development of forms is the goal of a separate discipline, the main subject for the history of forms. In a monograph devoted to Borromini, the research of the genesis of the forms has two further purposes. First of all, an insight into the development of an image can yield information about its structure which might be impossible or at least more difficult to glean from the finished work. But then, this also permits us to research the forces at work in the development of the forms. This would not be possible in any other way.

VIII. From the finished forms it is no longer possible to derive a clear inference of the forces at play in their emergence. It is possible for forms with identical characteristics to have come about in completely different ways, from differing models ('Ahnengebilde') for instance. This is the phenomenon of convergence which is so fundamentally important in other fields as well.[30]

IX. The particular goal of research also determines whether it is necessary to observe the concrete process of the genesis or if typical aspects of it are sufficient. To understand certain concrete peculiarities of a given structure, the first is essential; yet the latter is sufficient in making inferences of the formal forces generally at work. In such a case it is enough to ascertain whether a given form is derived from another existing form, and whether a concrete image representing it is the product of that type.

X. How can one study the emergence of images? In our particular case here, the most important medium are designs preserved in the numerous surviving drawings which give an exact insight into the process by which they emerged. In a certain sense they provide a profile of this process.

It is fundamentally possible to also study the development of forms when such documentation is absent. We shall demonstrate this thoroughly in another place, so that certain bare indications must suffice for the moment. In such instances, the development must be extrapolated from the finished image, its reliance and another derived for instance from certain common characteristics. Yet this alone can never be satisfactory. There must always also be a grade of probability, fundamentally similar to that in all conclusions reached in the natural sciences.[31] Probability is not rated in quantitative terms but estimated by the magnitude of its importance.

[30] Cf. Adolf Meyer, *Logik der Morphologie im Rahmen einer Logik der gesamten Biologie*, Berlin: Springer, 1926.

[31] Cf. Hans Reichenbach, 'Metaphysik und Naturwissenschaft', Symposion, 1, 2, 1925, 158-176 [available in English, 'Metaphysics and Natural Science', idem, *Selected Writings 1909-1953*, Dordrecht Boston: Reidel, 1978, 1, 283-297].

If the claim is made for instance that the oval design by Borromini for S. Carlo (Hempel, fig. 7) was derived from the rectangular design (Hempel, fig. 6), then this is possible to refute on the basis of such a conclusion of probability. This is due to the fact that the oval design shares common qualities with earlier oval images which existed before Borromini and where the form is more focal and fundamental than the similarities between the oval and the rectangular designs by Borromini himself. This would force one to assume that Borromini reinvented an existing oval structure. This might have a degree of probability when one can assume that Borromini did not have a knowledge of those earlier similar images. Since the opposite is known to be true, this assumption is positively improbable. When further details occur in this design which are present on an earlier image and do not relate to the central idea – the angular passages beside the altar space are from the Maderno oval design for S. Giacomo al Corso, the improbability reaches such an objective degree that this assumption is untenable.

XI. In any case: when two opposing claims have been made about a single image, then it is fundamentally possible to choose along strictly rational lines, assuming of course that these claims are specific and meaningful. In such cases, it has been doubted far less often that strict decisions are possible. As with our initial question, this is related to the fact that it is frequently possible to resolve such problems without having understood the images. The difficulties of understanding the image as they play a part in all of those examples are often at least not present in these.

In practice, there are two important procedures. In the one case it is necessary to demonstrate that the succinctly identified generative process is documented in the relevant historical period or at least concordant with the other stipulations of that time. This causes similar difficulties as the first criterion of structural descriptions. Nonetheless, this might also permit us to recognize that some assumptions surrounding the creation of given images are incorrect. Another criterion: whether a given genetic derivation of an image makes it is possible to understand some of its characteristics which could not be understood in terms of the central structural principles and might have been carried along in a rudimentary way (section 20 below).

XII. In the first steps toward studying the genesis of images one has initial experiences which supply a guiding knowledge for subsequent research.

First: in the field of architecture, two typical modes of development have been demonstrated, not always distinct in fact, but essentially and fundamentally different in their procedure – 'the creation of forms according to the given conditions' and 'creation on the basis of earlier imagery'. We shall explain this more fully later on. In the first case, the process does not begin with a firm extant image, but this is only reached in its course. At the beginning of the process, the architect does not know what the concrete appearance of the result will be, but only knows certain abstract characteristics. In the other case, the process begins with one or more models ('Ahnengebilde') and consists of a more or less complicated revision of

forms; intentionally, the architect has an image in mind with concrete formal qualities.

In reality there is no observable correlation for the popular image of art works emerging out of nothing or on the basis of the most minimal existing elements – in the case of architectural design this would be columns, entablatures, walls. The smallest units of productive architectural thought are not the smallest objective units – just as in music this would be the 'motifs' rather than the tones themselves.

XIII. In studying the origin of forms on the basis of other forms, one very soon has a trivial but decisive experience. The parts of the image need not correspond to the parts of the previous image, and that the whole of the image derives from other images than the parts (section 16 below). This explains the apparently paradoxical fact that a single image can lead to differing genetic derivations, remaining objectively equivalent but deviating only in their formulation.

We are here only studying the origin of the large forms of Borromini. A study of the Borrominesque 'details' is the subject of a further volume of studies.

2. Genetic analysis of the structure of an image

8. We choose the Casa dei Filippini for the first study of the genesis of a highly complex image by Borromini because it affords the best conditions for investigation – as should become clear at the end of our study. The typical conclusions to be reached are then applicable to an entire group of images with external similarities.

It is typical for the origin of such images that their structure is created according to the given conditions or the local 'topography' (in the broader sense). Given conditions is a reference to the shape of the lot being built on (topography in the narrow sense), the number of the required spaces and any sort of conditions imposed by the patron. One can therefore only understand the peculiar form of such an image completely when these conditions are known. In his Borromini monograph, Eberhard Hempel was able to discover the conditions contributing to the particular structure of the Casa dei Filippini and make essential progress beyond what had been known since Brinckmann. – On the basis of these objective conditions, the building has the goal of being as 'good' as possible.

As incisively as this can be done, we must now study these anticipated conclusions of our present endeavour. Our attention from beginning to end is directed to the dynamic aspect of this process in the emergence of such a structure with the given topographical circumstances, and on the basis of designs to be considered as phases in an unsteady progression. For our goal, the psychological mechanism of such a formal process is less important than the demonstrable significant relationships and tendencies within the image.

Hempel, fig. 17. The plot of ground was set as recorded in Hempel, fig. 16 with the existing church and sacristy. Before Borromini was hired, construction was begun on the sacristy 'without stabilizing the rest of the space' as Borromini noted critically. Construction proceeded 'fragmentarily'. Yet it was not possible to continue in the same way, for this would have resulted in a building that was an aggregate of other structures.

Two cardinal problems arose when the attempt was made to arrive at a unified architectural plan. The property had an uneven boundary, and the placement of the sacristy within it was 'random'. By taking the wall of the church as a limit in the east and drawing a line parallel to it in the west, it was possible to achieve a nearly regular lot. To the north, the curve of the street was accommodated by a blunt angle aligned vertically with the edge to the wet while it was necessary to leave the south at an angle. The tendency is directed toward a 'regular' shape. The topography yields a rectangle the complete form of which is determined precisely by this particular topography. Along its outer borders, the complex is lined by rows of rooms (with a breadth determined within certain limits by the number of spaces required). This is the zone to make up for the irregularity of the plot – which only touches the interior of the system at the north eastern corner. The second problem was the regular organization of the interior. Here the sacristy 'naturally' created a division into two courts. In fig. 17, the larger of the two is divided after the church rendered it uneven with a narrow tract creating a rectangle and a square while relating the three courts to one another.[32] The southern court is 'determined' in its breadth by the sacristy and bordered on three sides by loggias (the fourth being the sacristy). The two lateral sides form halls beside the sacristy, while the right enters onto the northern court and extends to the left through the entire complex, turning at a right angle in the north western corner and – along the northern row – forming the north side of both courts (which are divided by the narrow tract). Its extension includes an entry on the west side. There is a second point of entrance through the southern flight in the central axis of the southern court. The lateral axis of the northern court is continued in the southern loggia of the small square court by a space which it divides into halves and arrives at a third entrance on the eastern front.

All of these relationships and forms become 'understandable' and 'meaningful' within a larger whole.

By contrast to this, the overall disposition of the northern half of the complex remains 'random' – 'it is difficult to remember' and this results from the loose arrangement. The location of the oratory in the corner diagonally facing the church is also random and unfavourable in any practical way. It is unpractical in a formal sense – three spaces have been placed on the west side of the northern court which had no space. This leads to the loggia running as a tunnel.

[32] One can see that the whole is not based on a finished idea adjusted to the given conditions, but instead, the entire structure only emerges from the conditions.

Hempel, fig. 18. In this design, these three additional spaces have been placed on the north side of the court and the northern tract is kept shallower for this reason while this becomes possible by placing the oratory in place of the small court of fig. 17 and sacrificing the latter completely.[33] One can see how each change has an effect which extends over a far greater area than its immediate implementation. This change does not achieve very much. It is true that the western loggia in this way becomes the common border to both courts, but it turns the northern loggia into a single long tunnel. Access from the west is now from the lateral axis of the northern court (the eastern extension of which was necessarily sacrificed). For the sake of symmetry, a second portal with no function has been added in the west front.[34] It is far more important however that the tendency to a regular 'good' figure has an effect on the structure itself and has caused changes in it. This has made it possible to move the southern part past the previous vanishing line, and to correct the angle. It also allowed the future development which would place the main facade and the oratory here. For the time being, the additional space has been used differently – the southern court is also given a loggia on its fourth side. This convenient partial resolution was later given up in favour of a more convenient overall solution.

In their overall disposition, both solutions contain unrealized possibilities which actually push for a simplification of the total form. Once one has seen the later plans, it is almost incomprehensible that the idea of extending the eastern loggia through the entire construction parallel to that in the west did not immediately arise, and that it was in any way possible to even consider these locations of the oratory.

Hempel, fig. 19. As Hempel has correctly stressed, the design by Maruscelli introduced the essential innovation on both of these points. First – he conceives both courts as a single unit, but simply divided by the sacristy. For this, it was only necessary to extend the eastern loggia parallel to that of the west. Second – he places the oratory in the south western corner. For this reason, it was necessary to keep the southern tract lower making the southern court one axis shallower and again possible to only have loggias on three of its sides. In the area behind the tribune (which became wider by the narrowing of the northern court), this makes it possible however to accommodate those three large spaces (one of the refectory) which had previously actually been in the northern court, maintaining space for a small triangular utility area. This increase of space also allows him to add the fourth loggia (sacristy) to the northern court and round it out to a complete totality, more than compensating the loss in the southern court. Finally, the access to the oratory is on the same front as that to the church. Enormous advantages gained in a brilliant way! The internal arrangement is now very simple – the abbey is now a nearly completely regular and unified rectangular complex. There is a bit of the church

[33] In practical terms, this location is even worse than in fig. 17 – with access from the narrow street.

[34] The main stair with its lowest run in the axis of the west loggia has been placed more 'meaningfully' than in fig. 17.

protruding into it from the east. The remaining space behind the tribune is a third isolated complex where the topographical irregularity was exclusively 'foisted'.

Again one can see how all parts interpenetrate. An area affected by a single shift becomes all the greater as the structure becomes more complete. It becomes increasingly difficult to make changes without endangering what has already been achieved.

Maruscelli also improved numerous details. The main staircase has the same form and is in the same corner as in fig. 18 and is placed in the axis of the southern loggia. This sacrifices two rooms in the western suite of spaces which are then regained by eliminating the two exits in the north-west corner. The diagonal axis of the northern court retains its access from the west, but since the changed form of the court places it further north, he is able to continue it with a vestibule of the refectory on the main axis behind the tribune. Everywhere, there are firm connections of the parts developed from the overall structure, quickly achieving the maximum of what this design would permit.

Yet there is still pressure from the tendency toward the most simple and 'good' form possible, toward symmetry. The inner rectangular arrangement of the abbey is still not as symmetrical as possible (although the location of the church prevents this from being achieved completely). In contemplating the project by Maruscelli in regard to this tendency, which had been present from the outset, it is possible to actually predict the formal refinements still possible.

Hempel, fig. 20. Here this tendency is now carried through completely. The second loggia is extended to the southern wall, parallel to that at the east with the oratory inserted in between – and the diagonal axis of the oratory aligned with the main axis of the entire court complex. The most important space within the complex has now received a formally meaningful spot within the total structure. Its facade is on the south front before its side wall – relating both to the oratory and to the entire abbey complex.

With this, the entire left segmental whole ('Teilganzes') has positively found an even balance. 'The structure attains a quality of seclusion which had not previously been present'. The dynamic process of developing the structure has conclusively reached a state of balance. Its formally meaningful aspects are maximized. What Borromini said about a partial resolution (the stairs) might equally well be applied to his solution for the whole – 'Even when I see it myself, it is difficult to believe that it has been possible to achieve so much'.

At the same time, Borromini has also succeeded in unifying the functional architectural parts (spaces) according to a simple and highly consistent principle. The uneven and formally very isolated area behind the tribune has been allocated to the kitchen and service spaces.[35] With the large rectangular complex it shares a sharp line running through the south wall of the sacristy (gratings have been added

[35] This is the reason that the refectory was moved to the east tract of the large whole of the court.

in the loggias here and the stairs in the west tract reach up to this point). The part to the north of this line is the enclosed area of the abbey. To the south are the spaces available to visitors – the oratory with the library (above), the main staircase, rooms for visitors, lodging of the gatekeeper. This achieves the greatest possible concurrence between the aesthetic-formal and the functional structure ('Gliederung').

Hempel, fig. 15. The ideal vision of fig. 20 had failed since it had not been reconcilable to the practical needs of the southern tract – it was not possible to accommodate the necessary spaces for the gatekeeper. This was the reason that this design was not executed, but instead essentially that by Maruscelli with the changes and detailed improvements by Borromini. A result of that attempt at a complete symmetry was that the facade remained in the same place as in fig. 20 in spite of the fact that the oratory itself was returned to the place allotted to it by Maruscelli. The central axis of the facade leads through a vestibule of the oratory below the galleries reserved for the cardinals and into the central arcade of the southern court. The main axis of the oratory crosses this one and continues through a passage on to the eastern loggia.

Borromini's resolution for the interior of the oratory best reveals how details are derived from the structure of adjacent parts and ultimately from the overall structure – it was this which led to Borromini being awarded the commission.[36] This had led Maruscelli to an insurmountable difficulty (for him). The location and dimensions of the oratory had already been determined. Yet it appeared to be impossible to meaningfully organize ('buona regola') the windows of the north wall. Since it was necessary for them to open onto the arcade of the court and the corner pier of the arcade was wider than the others, the intervals within would have been uneven and created an embarrassing formal flaw![37] Borromini had the heavier pier correspond to a niche within, and made this the lateral axis. To the east of this lateral axis, the front wall was fixed by the passage dictated by the total structure. At the same distance to the west, Borromini truncated the remaining space by inserting a gallery. This resulted in each longer wall including four windows and a niche at the centre, and made a gallery possible at the west to correspond formally to the east, which (as he himself noted with satisfaction) revealed itself later to be a practical necessity. This is how a space came about which Borromini could never have anticipated when he began work on the commission.

A further axis had been developed in the earliest designs – that of the sacristy and the church. This was not at the centre of the sacristy wall, since the sacristy had subsidiary spaces, and 'the body leans to one side'. Brinckmann first demonstrated how Borromini brilliantly dealt with this apparently unimproveable drawback by rounding off the corners between the sacristy and the first arcade of the southern court so that the door now stands nearly exactly at the centre of that

[36] Frey has described the process correctly in all essential aspects.

[37] It is characteristic that there was never a consideration of placing the windows elsewhere than at the centre of the arcades.

section of wall. Further advantages followed – this serves to emphasize the main axis of the entire complex more strongly within the small laterally placed court. It was possible to install windows for the side spaces of the sacristy within the niches placed in the rounded corners. As Hempel has astutely observed, the niches also fulfil another function in the articulation of the elevation – they strongly bind the sacristy wall to the arcades.

The 'form' and the idea which were necessary for resolving this problem did not emerge from the given situation but were taken over from the court designed by Vigola for the Palazzo Farnese in Vicenza (Willich, *Vignola*, plate 14, 2). For this situation, see section 11. In the same sense, the motif of the roof gallery which seems to emerge 'naturally' from the practical situation has also been taken from the Palace of Caprarola by Vignola.

Finally, it was also at this stage that the lateral axis of the north court was abandoned since it had lost its function and merely deterred from the main tendency ('Haupttendenz'). A number of details from the overall structure should be understood in the same way.

To avoid overly encumbering the image from the very beginning the data of the ground plans have only been rendered as a sort of 'after-image'. An analysis of the construction does not yield any essential aspects about the mode of thought. It is very cumbersome to express this situation in words. They do not say much to those not accustomed to this sort of imagery, while the sections reproduced by Hempel are probably sufficient for the others. In spite of the fact that one can only appreciate the full depth of his achievement after recognizing the refined relationship among three-dimensional details (such as the small staircase which Borromini referred to with such satisfaction), we shall nonetheless therefore forego such a demonstration at this point. Nobody unable to imagine a plastic model with all of the essential points should believe they have an idea of this!

Hempel, fig. 21. The solution was the best permitted by the given conditions. Seen as a whole however, the complex of the abbey and the church remained incomplete. It is 'lopsided' and strives towards a balance – which is impossible. Intermittently, the prospect of achieving this tendency arose, when during the pontificate of Innocent X., the patron of Borromini, a plan was considered to expand the property to the east – as recorded in a drawing.[38] To eliminate the asymmetry between the church and the abbey, Borromini planned to repeat everything appearing to the left of the church outwardly exactly alike, and therefore not merely the facade of the oratory. One can see how the tendency toward a 'complete' form ('Gestalt') cannot remain passive. The necessary breadth and a certain intrinsic structure existed for the realization of this second complex (depth and course of the northern border were set by the extrinsic situation). Internal structure: like that to the left, this complex would also have a court corresponding to the facade, loggias

[38] This project is drawn onto a previous early design for the Casa dei Filippini (Hempel).

corresponding to the lateral axes of the facade, and a flight of spaces behind the outermost axis.

Yet this is all that can be derived here from the far simpler 'conditions'. To further understand the form of this project it is necessary to recognize that Borromini made use of two motifs whose form cannot be grasped from this context. These are two independent motifs which can be separated with a single section. The idea of the arcaded court with a domed structure rising behind one of its narrow sides is derived at least as Borromini conceives it from the Piazza d'oro of the Villa Hadriana.[39] The second motif, which is only loosely added, is a sequence of spaces with varying forms and progressively changing proportions (and an even breadth) aligned along an extended spatial axis – it is a colourful spatial image vividly recalling the famous suite at the Hôtel Lambert in Paris which was made around the same time.[40] Both motifs are completely independent of the overall structure – the only accommodation of this came in certain choices and the determination of given details. For instance the windows in the sequence of spaces include a 'raison' (ratio) derived from the arcades of the loggia and itself providing a link to the second motif.

9. One must avoid a possible misunderstanding. We have not understood or even seen the entire process, but only its crudest tendency. Just as we only saw the coarsest structural principle of S. Carlino, we have here also only grasped certain essential aspects of the general course of the formal development. There are objective grounds for determining what these are, and these are reached by a view of the entire subject itself in terms of gestalt ('gestaltetes Sehen') – all of the preserved drawings by Borromini.

In studying his other drawings, it becomes clear that he repeatedly worked in other directions, not always conscious of the ramifications. This accounts for the 'irrational' aspects. This allows us to 'take a peep behind the scenes, at the elaborate and vacillating crudities of thought – at the true purposes seized only at the last moment (!) – at the innumerable glimpses of ideas that arrived not to the maturity of full view – at the fully mature fancies discarded in despair as unmanageable – at the cautious selections and rejections – at the painful erasures and interpolations.' In this, we have shown that there is no contradiction to the fact that 'no one point in its composition is referable either to accident or intuition – that the work proceeded, step by step to its completion with the precision and rigid consequence of a

[39] At the Sapienza he essentially executed the same idea.

[40] Brinckmann, fig. 209-211, by the architect Levaux. Since it is highly unlikely that one of these might depend on the other, this appears rather to be the parallel realization of a tendency of the time which Brinckmann has characterized as the development of 'rhythmically integrated sequences of spaces.'

mathematical problem'.[41] This problem forces all of those attempting a resolution to return in its direction from various approaches.

10. Secondly: what one can learn from the structural tendencies of a whole by such an analysis is nothing more than the geometrical form and the internal arrangement of the unadorned building. From this, we can understand why a door must be placed at one spot and a window or a facade at another, and possibly why it requires these particular dimensions rather than others, but not why the door in the facade is given this particular form rather than another. If one makes the attempt to understand a given image such as the unique form of the door to the great loggia, then there is a feeling of unsuccessfully lapsing in an understanding of certain objects using those concepts from just now. This is natural since both types of images come about by completely differing processes.

Rather than recognizing this, earlier research attempted to deceive itself about this distinction. From the architecture of their own times, they were familiar with the one process of finding a 'resolution' to accommodate the 'task' set by a given 'architectural situation' according to certain guidelines, while they had no more than very vague ideas about the development of the facade, and tended to see it as freely invented. It was typical to make statements to the effect that the artist derived it from the wall for instance. This is basically the variant of a tendency to derive every aspect of an externally complete image from one single central principle.

11. This typical mistake is best seen in the facade. If so much has been understood in terms of the structural principles of the entire complex, then it might well appear that the peculiar form of the facade with a convex centre and concave wings should be seen in the same way. Its breadth is fixed by the whole and the height was set within certain flexible limitations. From the design reproduced by Hempel, fig. 20 it seems possible to grasp the protrusion of the central axis as an external form of the inside niche (which would be a first mistake since the niche is clearly a less important, secondary, element within this design). If one reads the *Opus architectonicum* uncritically, it is possible to find an explanation for the concave protrusion of the wings – this makes space for the very necessary square piers supporting the oratory vaulting. This explanation is plausible – but equally incorrect. All of this is untenable because it is possible to show that this form of the facade came about in a very different way and was already prescribed in this situation (see section 19 below).[42] It was simply chosen from among other available

[41] Edgar Allen Poe, 'The Philosophy of Composition', *Graham's Magazine*, vol. 28, no. 4, April, 1846, p. 162, col. 2. The term 'intuition' cannot be taken in the very different and completely separate connotation that has become current in writings about art.

[42] Borromini himself gave an explanation for the form of the facade – he modelled it on the midriff of the human body (chest and arms). The fact that this is a meaningless fashionable truism is confirmed by Bernini who said the same thing about his design for the square before St. Peter's. This strikingly recalls some of the 'explanations' made in writings about art in our own time. It does nonetheless correctly express that Borromini imagined himself

possibilities because at this point it conveniently fulfilled the requirements of the overall structure.

We have just previously made exactly the same observation about the corners in the small court. In both of these cases, if one is to accept the apparent explanation ('Scheineinsicht'), then a historical and genetic derivation would seem to be extraneous. Such examples provide quite concrete illustrations of the a-historical tendency of these rationalist explanations.

12. By contrast, an unprejudiced observation will show that such an image is neither homogeneous in genetic nor in structural terms. Viewed genetically, the components of such complicated architectural structures come from two sides. The one (the architectural block), come about as 'solutions' within given conditions to problems as they have been posed, while the others (the facade, tower, windows, doors etc.) are transformations of previously existing forms. These individual pieces, the facade, tower, windows, doors etc., are installed in the bare architectural block much as carved precious stones are set into a polished and prepared metal mount. The form of such a stone cannot be changed any more than slightly grazed, but it can be chosen freely. Conversely, the form of the stone might also have an altering effect on the whole into which it is set.

13. This same image can further clarify a characteristic of Borromini's imagery. It is possible to blur the contrast between the component parts so that the stones appear to emerge organically from the metal, or else also to exaggerate it so that the first glance endows it with a unique appearance as if inserted here from elsewhere. In Borromini, the latter is the case. In phenomenal terms these images are also not homogeneous and their non-homogeneity is apparent at first glance. The facade of the Casa dei Filippini or that of S. Carlo alle quattro fontane could without distortion be lifted away by our fingernails, while the windows of the Collegio di Propaganda Fide stick in the wall like raisins in a cake. Even where they are more firmly integrated, such forms also stand out by their fundamentally different 'habitus'. Directly beside the plastic forms of such overly opulent imagery there are bare walls without form, or only the most threadbare articulation developed straight from the wall itself, such as simple mural bands with no sculptural detail.[43]

Like their external appearance, these forms have also been developed along very different lines. One more: they are not formed to accommodate 'conditions', but derived from concrete ancestral images by transformational processes. These shall be demonstrated in the following chapter.

14. A number of other buildings had a genesis essentially the same as those we have just discussed – the Palazzo Carpegna, the Palazzo di Propaganda Fide, the

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within the 'body' of the building. This relation to architecture is typical of the Baroque. cf. below p. 149 of the German original.

[43] A system developed after the mid-16th century was decisive for the garden front of the abbey of S. Carlino and similarly for that of the Filippini. See Ammanati's Collegio Romano and Vignola's Caprarola. A number of the motifs used by Borromini reveal that he studied the works of Vignola especially closely. See section 84 below.

Convent of S. Carlo alle quattro fontane. As appealing as this would be, to analyze them would not provide anything fundamentally new. There too, one is constantly confronted with individual images which cannot be understood in the same way as the encompassing structure into which they have been inserted. Their form does follow from the conditions, but they were taken over into the encompassing structure in their complete state and simply integrated.

15. This allows us to understand why it is possible to study the church of S. Carlo in isolation from the abbey complex into which it is integrated. The only aspect to be derivable from it would be a certain extended form dictated by the topography and lighting from raised sources since the church is encased by other buildings. Its complete distinct structure can never be derived from that of the convent. This can however allow us to understand why two of the four diagonal chapels of identical form were removed from the symmetrical arrangement and changes made to the axial relations of those remaining. They are no longer subsidiary units, partial spaces of the church, but are treated rather as randomly added individual chapels – and this is clearly indicated by the forms of their details which differ very strongly from those of the church. One can only understand the location of the chapels in relation to the church by the structure into which they have been inserted, but this would be completely meaningless if the church is viewed in isolation. By contrast, its form demands a separate genetic explanation just as the church itself.

2. The genesis of some of the Borrominesque 'elements'

16. One of the most characteristic elements in the art of Borromini is the famous facade of S. Carlo alle quattro fontane, which was imitated countless times. We inquire as to the genesis of this image. Its lower level is completely identical to part of a design by Borromini for the interior of S. Carlo which we shall refer to as the third design (fig. 7 and 9).[44] The new image came about when a part – in this case a section of three bays from the wall – was 'excised' from the more complex mother-structure and used as a separate unit. The operation by which the new structure (neues Gebilde) emerged is therefore one of splitting, of 'visually perceiving a subordinate unit (of a segmental whole ['Teil-Ganzes']) separately from a larger whole'. The upper level of the facade has emerged genetically in a very similar way from the fourth design for the interior of S. Carlo as Borromini developed it from the third design (fig. 8 and 10). On the autograph drawing by Borromini (Hempel, fig. 9), the sections of the wall corresponding to the facade have been superimposed from both designs, exactly as they appear in a ground plan of

[44] On the self-evident meaning of the term 'identical' cf. Kurt Lewin, *Der Begriff der Genese in Physik, Biologie und Entwicklungsgeschichte Eine Untersuchung zur vergleichenden Wissenschaftslehre*, Berlin: Springer, 1922.

the facade. We shall refer to these tripartite units as 'bays' ('Travee'), and abbreviate them as 'B'.

On the facade, both of these surface-oriented units B1 and B2, derived from older and more complex images, have been superimposed on one another according to an earlier scheme already documented in the early Baroque and the Renaissance.[45]

The architect did not arrive at this facade by inserting waves into a flat design, but by replacing the flat tripartite segments of such a facade with formally equivalent but wavy images. Of course, it is possible to imagine it, but this conceivability does not bear weight in determining how the image actually came about historically.

At this point, the question arises as to how one might explain the unique form ('Gestalt') of the third design with the wavy interior walls. (Hempel has already answered this question). Genetically, it is identical with the ancient image of the 'domed hall' of the so-called Piazza d'oro of the Villa Hadriana in Tivoli (fig. 6).[46] There is the simple difference that Borromini has made the design using an oval rather than a circular cupola, and the edges of the space are articulated differently.

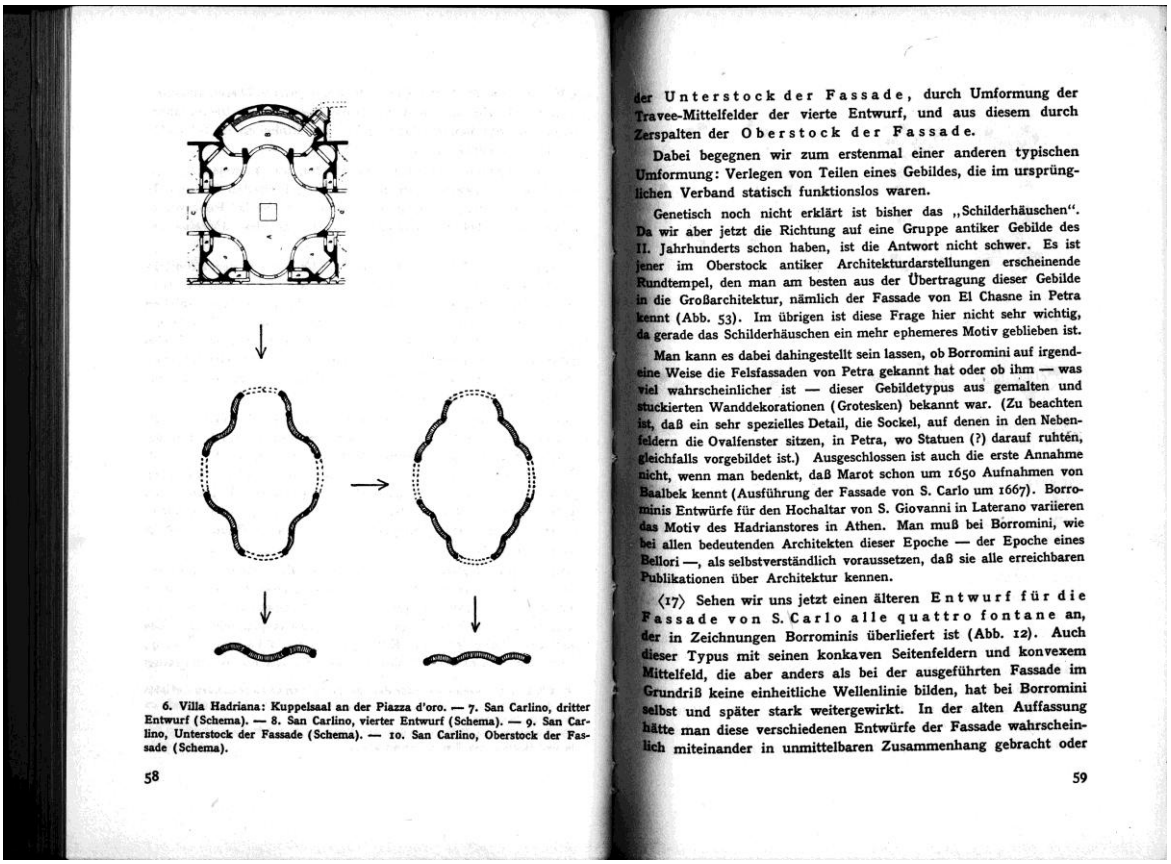
This design became the direct source for the fourth in which Borromini rendered the convex central fields as concave – where they had had no static function in the system of vaulting and could be moved without changing the other relations. Therefore the genetic sequence runs from the domed hall of the Piazza d'oro to the third design for S. Carlino, and by a splitting of the lower story of the facade to the changed central fields-bays of the fourth design and from this by splitting the upper story of the facade.

This confronts us for the first time with another typical transformation – the reshuffling of parts of an image which had been statically without a function in the original conglomeration.

Genetically, the 'sentry-box' has not yet been explained. Since we now recognize the trend toward ancient 2nd century images, the answer is not difficult. This is the circular temple appearing on the upper levels of ancient architectural imagery, best known from its transfer into large-scale architecture, such as the facade of El Chasne at Petra (fig. 53). Otherwise, this question is not terribly important for us here, since the sentry-box comprises a more ephemeral motif.

[45] Therefore, the parts (subordinate units) of the facade are derived from other images than the scheme of the whole facade. As our study progresses, one should continue to bear this typical example in mind.

[46] Cf. the reconstruction of the domed hall in Hermann Winnefeld, 'Die Villa des Hadrian bei Tivoli Aufnahmen und Untersuchungen', *Jahrbuch des Kaiserlich Deutschen Archäologischen Instituts*, drittes Ergänzungsheft, Berlin: Reimer, 1895, vi, 168 pp.



6. Villa Hadriana: Kuppelsaal an der Piazza d'oro. — 7. San Carlino, dritter Entwurf (Schema). — 8. San Carlino, vierter Entwurf (Schema). — 9. San Carlino, Unterstock der Fassade (Schema). — 10. San Carlino, Oberstock der Fassade (Schema).

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der Unterstock der Fassade, durch Umformung der Travee-Mittelfelder der vierte Entwurf, und aus diesem durch Zerspalten der Oberstock der Fassade.

Dabei begegnen wir zum erstenmal einer anderen typischen Umformung: Verlegen von Teilen eines Gebildes, die im ursprünglichen Verband statisch funktionslos waren.

Genetisch noch nicht erklärt ist bisher das „Schilderhäuschen". Da wir aber jetzt die Richtung auf eine Gruppe antiker Gebilde des II. Jahrhunderts schon haben, ist die Antwort nicht schwer. Es ist jener im Oberstock antiker Architekturdarstellungen erscheinende Rundtempel, den man am besten aus der Übertragung dieser Gebilde in die Großarchitektur, nämlich der Fassade von El Chasne in Petra kennt (Abb. 53). Im übrigen ist diese Frage hier nicht sehr wichtig, da gerade das Schilderhäuschen ein mehr ephemeres Motiv geblieben ist.

Man kann es dabei dahingestellt sein lassen, ob Borromini auf irgendeine Weise die Felsfassaden von Petra gekannt hat oder ob ihm — was viel wahrscheinlicher ist — dieser Gebildetypus aus gemalten und stuckierten Wanddekorationen (Grotesken) bekannt war. (Zu beachten ist, daß ein sehr spezielles Detail, die Sockel, auf denen in den Nebenfeldern die Ovalfenster sitzen, in Petra, wo Statuen (?) darauf ruhten, gleichfalls vorgebildet ist.) Ausgeschlossen ist auch die erste Annahme nicht, wenn man bedenkt, daß Marot schon um 1650 Aufnahmen von Baalbek kennt (Ausführung der Fassade von S. Carlo um 1667). Borrominis Entwürfe für den Hochaltar von S. Giovanni in Laterano variieren das Motiv des Hadrianstores in Athen. Man muß bei Borromini, wie bei allen bedeutenden Architekten dieser Epoche — der Epoche eines Bellori —, als selbstverständlich voraussetzen, daß sie alle erreichbaren Publikationen über Architektur kennen.

⟨17⟩ Sehen wir uns jetzt einen älteren Entwurf für die Fassade von S. Carlo alle quattro fontane an, der in Zeichnungen Borrominis überliefert ist (Abb. 12). Auch dieser Typus mit seinen konkaven Seitenfeldern und konvexem Mittelfeld, die aber anders als bei der ausgeführten Fassade im Grundriß keine einheitliche Wellenlinie bilden, hat bei Borromini selbst und später stark weitergewirkt. In der alten Auffassung hätte man diese verschiedenen Entwürfe der Fassade wahrscheinlich miteinander in unmittelbaren Zusammenhang gebracht oder

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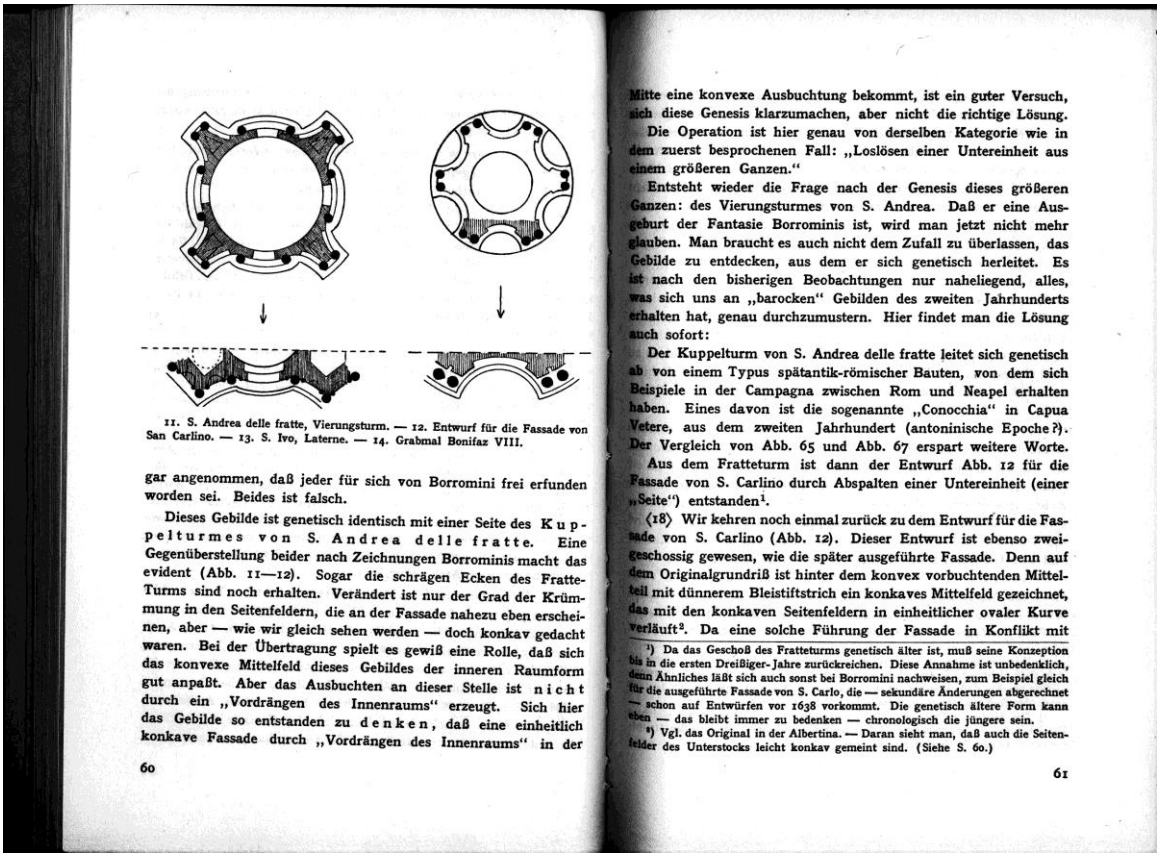
6. Villa of Hadrian: Domed space of the Piazza d'oro – 7. San Carlino, third design (scheme) – 8. San Carlino, fourth design (scheme) – 9. San Carlino, lower level of the façade (scheme) – 10. San Carlino, upper level of the façade (scheme).

It must remain an open question whether Borromini somehow knew of the carved cliff facades of Petra, or whether – more likely – he was familiar with this architectural type from ancient painted or stucco mural decorations (grotesques). (One should also note that the very specific detail of the socle supporting the oval windows of the lateral fields also existed already at Petra where it seems possibly to once have supported statues). The other assumption is also not an impossibility if one considers that Marot knew images of Baalbek in 1650 (the facade of S. Carlo being executed around 1667). The designs which Borromini made for the high altar of S. Giovanni in Laterano include variations of the motif of the gate of Hadrian in Athens. As with all of the significant architects of this period – that of Bellori, one must assume that Borromini knew of all available architectural publications.

17. Now we study preserved drawings by Borromini for an earlier design for the facade of S. Carlo alle quattro fontrane (fig 12). This type with concave lateral elements beside a convex centre but unlike the ultimate facade with no unified wave, also had an effect on Borromini himself and a later influence as well. Previous conceptions would probably have associated these various facade designs in a direct relation to one another or even assumed that each of them had been independently invented by Borromini. Neither of this is true.



11. S. Andrea delle fratte, Vierungsturm. — 12. Entwurf für die Fassade von San Carlino. — 13. S. Ivo, Laterne. — 14. Grabmal Bonifaz VIII.

gar angenommen, daß jeder für sich von Borromini frei erfunden worden sei. Beides ist falsch.

Dieses Gebilde ist genetisch identisch mit einer Seite des Kuppelturmes von S. Andrea delle fratte. Eine Gegenüberstellung beider nach Zeichnungen Borrominis macht das evident (Abb. 11—12). Sogar die schrägen Ecken des Fratte-Turms sind noch erhalten. Verändert ist nur der Grad der Krümmung in den Seitenfeldern, die an der Fassade nahezu eben erscheinen, aber — wie wir gleich sehen werden — doch konkav gedacht waren. Bei der Übertragung spielt es gewiß eine Rolle, daß sich das konvexe Mittelfeld dieses Gebildes der inneren Raumform gut anpaßt. Aber das Ausbuchten an dieser Stelle ist nicht durch ein „Vordrängen des Innenraums" erzeugt. Sich hier das Gebilde so entstanden zu denken, daß eine einheitlich konkave Fassade durch „Vordrängen des Innenraums" in der

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Mitte eine konvexe Ausbuchtung bekommt, ist ein guter Versuch, sich diese Genesis klarzumachen, aber nicht die richtige Lösung.

Die Operation ist hier genau von derselben Kategorie wie in dem zuerst besprochenen Fall: „Loslösen einer Untereinheit aus einem größeren Ganzen."

Entsteht wieder die Frage nach der Genesis dieses größeren Ganzen: des Vierungsturmes von S. Andrea. Daß er eine Ausgeburt der Fantasie Borrominis ist, wird man jetzt nicht mehr glauben. Man braucht es auch nicht dem Zufall zu überlassen, das Gebilde zu entdecken, aus dem er sich genetisch herleitet. Es ist nach den bisherigen Beobachtungen nur naheliegend, alles, was sich uns an „barocken" Gebilden des zweiten Jahrhunderts erhalten hat, genau durchzumustern. Hier findet man die Lösung auch sofort:

Der Kuppelturm von S. Andrea delle fratte leitet sich genetisch ab von einem Typus spätantik-römischer Bauten, von dem sich Beispiele in der Campagna zwischen Rom und Neapel erhalten haben. Eines davon ist die sogenannte „Conocchia" in Capua Vetere, aus dem zweiten Jahrhundert (antoninische Epoche?). Der Vergleich von Abb. 65 und Abb. 67 erspart weitere Worte.

Aus dem Fratteturm ist dann der Entwurf Abb. 12 für die Fassade von S. Carlino durch Abspalten einer Untereinheit (einer „Seite") entstanden[1].

(18) Wir kehren noch einmal zurück zu dem Entwurf für die Fassade von S. Carlino (Abb. 12). Dieser Entwurf ist ebenso zweigeschossig gewesen, wie die später ausgeführte Fassade. Denn auf dem Originalgrundriß ist hinter dem konvex vorbuchtenden Mittelteil mit dünnerem Bleistiftstrich ein konkaves Mittelfeld gezeichnet, das mit den konkaven Seitenfeldern in einheitlicher ovaler Kurve verläuft[2]. Da eine solche Führung der Fassade in Konflikt mit

[1]) Da das Geschoß des Fratteturms genetisch älter ist, muß seine Konzeption bis in die ersten Dreißiger-Jahre zurückreichen. Diese Annahme ist unbedenklich, denn Ähnliches läßt sich auch sonst bei Borromini nachweisen, zum Beispiel gleich für die ausgeführte Fassade von S. Carlo, die — sekundäre Änderungen abgerechnet — schon auf Entwürfen vor 1638 vorkommt. Die genetisch ältere Form kann eben — das bleibt immer zu bedenken — chronologisch die jüngere sein.

[2]) Vgl. das Original in der Albertina. — Daran sieht man, daß auch die Seitenfelder des Unterstocks leicht konkav gemeint sind. (Siehe S. 60.)

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11. S. Andrea delle fratte, crossing tower – 12. Design for the façade of San Carlino – 13. S. Ivo, lantern – 14. Tomb of Pope Boniface VIII.

This image is genetically identical with one side of the domed tower of S. Andrea dele fratte. This is evident from a comparison between the two on the basis of the Borromini drawings (fig. 11-12). Even the angled corners of the Fratte-tower are still preserved. The only aspect to have been changed is the curve in the lateral fields which appear nearly flat on the facade but were nonetheless conceived as concave – as we shall see shortly. It was certainly important to the process of transferring this that the convex central field of the image was well adapted to the form of the interior space. Yet the outward bulge at this spot is not generated by a 'surge on the part of the interior space'. To imagine this image as a unified concave facade given a convex bulge at the centre by a 'surge on the part of the interior space' is a good attempt at explaining its genesis but is not the correct solution.

This operation was of exactly the same category as the example first mentioned – 'the uncoupling of a subsidiary unity from a larger whole'.

Again, the question arises as to the genesis of this larger whole – the crossing tower of S. Andrea. One will no longer believe that it is a product of Borromini's imagination. There is also no need to believe that this genetic source was discovered randomly. From what we have observed, one should look closely at all of the

'Baroque' images which are preserved from the 2nd century AD. It is here where one immediately finds the solution.

The dome tower of S. Andrea delle Fratte is genetically derived from a late-antique Roman architectural type which is preserved in examples from the Campagna between Rome and Naples. One of these is the so-called 'Conocchia' in Capua Vetere of the 2nd century (possibly from the Antonine period). A comparison of fig. 65 with fig. 67 makes any other words unnecessary.

The design in fig. 12 for the S. Carlo facade was derived from the tower of the Fratte by splitting off one of its subsidiary units (a 'side').[47]

18. We return to the design for the facade of S. Carlino (fig. 12). This design has two levels exactly as it was later to be built in reality. On the original ground plan, a concave central field is shown with a more delicate pencil line behind the convex bulge of the central part, and is aligned with the oval curve of the concave lateral fields.[48] Since such a configuration of the facade would have conflicted with space behind, these lines can only refer to the contours of an upper story. One is struck by the analogy to the finished façade. Precisely again, there is a variation of the lower story with the convex central section swinging into the relevant concave shape 'like an elastic membrane'. Thus the unified concave bay of the design is derived from the bay of the Fratte tower – or to state it more precisely, is imagined by Borromini to emerge in this way as another representation of the same gestalt-type ('Gestalt-Typus').

This is generally the same path as in the first case, which leads from the preceding images to the new one. It leads from an ancient image of the type of fig. 67 to the Fratte crossing tower, and from this to the splitting of the lower level of the design fig. 12, and then to the upper story by a variation (reversal) of the central field. In this it is typical of Borromini to conceive simpler images, such as the bare concave upper story, as borderline cases of a more complicated type.

19. This design was actually realized in another work by Borromini, and thus had a further influence. The facade of the oratory of the Filippini (fig. 87) consists of the same image – only extended by a single axis at either lateral end.[49] The tri-axial central section is completely identical genetically with the design we have just discussed. A single difference lies in the flatter curves – due to its greater breadth – and the image is 'instrumentalized' with pilasters rather than columns. A

[47] Since the level of the Fratte tower is genetically earlier, its design must have begun at the beginning of the 1630's. Such an assumption is not precarious since other similar examples can be found in Borromini such as in the finished version of the S. Carlo facade for which drawings were already being made in 1638 – excluding the secondary changes.

[48] See the original drawing in the Albertina. One can there see that the lateral fields of the lower story are intended to be slightly concave. (See our section 17).

[49] It is not yet clear how we should imagine such an extension in genetic terms. It is by no means as simple as one might naively suppose. One must bear in mind that the outermost axes are emphasized against the firmly unified tri-axial centre by slightly receding.

connection to those designs is also apparent in the broken pediment which occurs in the designs for the facade of S. Carlino (Hempel, plate 126).[50]

A variant of the lower level in that design occurs in the Filomeno Tomb in Naples (Hempel, plate 50), again with the same terminal elements relatively closely associated with this motif. Here the lateral fields have become completely flat; it is another example of how the simpler forms are developed from the more complex, and not vice versa. Another representation of the same type is the entrance wall of S. Giovanni in Laterano (interior).

All of these images are derivatives of the crossing tower of S. Andrea delle Fratte.

20. We consider a further example of the same typical process in the origin of new forms which became prototypes for later forms. In order to better impress ourselves with the process more clearly, we shall study it in reverse, and ourselves perform the operation as we have become familiar with it.

Cassirer has shown that the form of the lantern on the dome of S. Ivo (fig. 60) is genetically derived from that ancient type known to us from the circular temple at Baalbek. This was probably known from the drawings by Polidoro da Caravaggio, published by Cassirer, and already including the recasting into an oval as Borromini used it in the lantern at S. Carlino (fig. 52).

We separate a subsidiary unit ('Untereinheit') from this image in the same manner which we have seen Borromini himself do this at S. Carlino with the Fratte tower. We are mindful of deriving a self-enclosed relief image with the greatest possible 'plastic' movement.[51] This segregated piece is illustrated in fig. 14. Such a form could be used as a window frame or something of that kind.

This image which we have arrived at by 'deduction' on the basis of our previous experience with Borromini actually occurs in his work. It requires nothing more than to be designated – the Tomb of Pope Boniface VIII. in S. Giovanni in Laterano (Hempel, plate 62, 2). This easily explains the presence of the pilaster beside the column; the opening of the window has been replaced by an inscribed tablet. The new image has again been derived by separation from one that was more complex.

21. It is also possible for images of a type with a similar external appearance, such as the tomb deduced here, to arise along different lines. For example as follows: when windows and doors are installed in a large semi-circular niche, as this was after all done already in the Renaissance and early Baroque, then as elements of the whole, these also participate in the curve of the niche; the beams and roofing, and possibly also capital cornices and plinths of the columns are curved horizontally. When windows, doors, or entire segments of the niche are removed from it and transferred to flat wall space, then this results in typical 'Baroque' forms – with an outward appearance often quite similar to those we have just derived

[50] The niche in the upper story as a secondary motif and not of the same importance as the protrusion below.

[51] Our reasons for doing this only become completely apparent below in section 71.

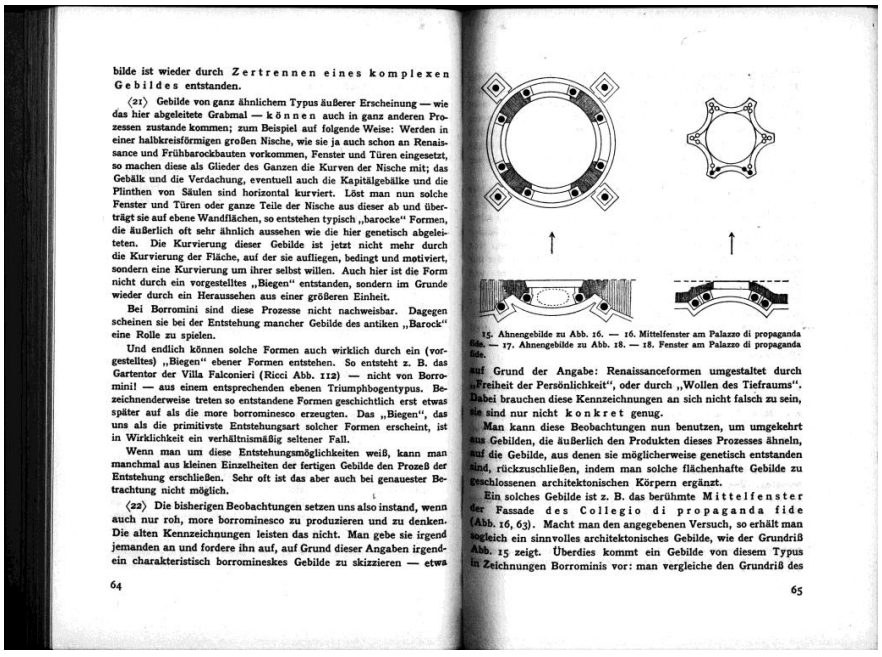
genetically. The curve of these images is no longer conditioned or motivated by the surface supporting them, but presents a curve existing in and of itself. In this case, the form also does not arise from an imaginary 'bending', but again from being seen apart from a larger whole.

These processes cannot be demonstrated in the work of Borromini. They do however seem to have been a part in the origin of some of the ancient 'Baroque' monuments.

Such forms might finally also be actually derived from an (imaginary) 'bending' of flat forms. For example, this is how the garden gate of the Villa Falconieri came about (fig. 112) – not by Borromini! – from a flat type of triumphal arch. It is characteristic that forms derived in this manner tend to arise at historically later moments than those generated in the manner of Borromini. The 'bending' which strikes us as the most primitive mode of origin for such forms is in fact relatively rare.

When it is known in which ways such things might have been formed, then it will also occasionally be possible to extrapolate the process of origin from a finished detail. This is also often impossible with even the most careful attention.

22. Our previous observations allow us, however crudely to produce and to think in the manner of Borromini. This could not have been done with the traditional qualifications. One could explain this to somebody and pose the problem of sketching an image in a manner characteristic of Borromini – such as remodelling Renaissance forms on the basis of 'freedom of personality' or an 'intention of spatial depth'. These traditional characterizations need not be incorrect, they are simply not sufficiently concrete.



bilde ist wieder durch Zertrennen eines komplexen Gebildes entstanden.

⟨21⟩ Gebilde von ganz ähnlichem Typus äußerer Erscheinung — wie das hier abgeleitete Grabmal — können auch in ganz anderen Prozessen zustande kommen; zum Beispiel auf folgende Weise: Werden in einer halbkreisförmigen großen Nische, wie sie ja auch schon an Renaissance und Frühbarockbauten vorkommen, Fenster und Türen eingesetzt, so machen diese als Glieder des Ganzen die Kurven der Nische mit; das Gebälk und die Verdachung, eventuell auch die Kapitälgebälke und die Plinthen von Säulen sind horizontal kurviert. Löst man nun solche Fenster und Türen oder ganze Teile der Nische aus dieser ab und überträgt sie auf ebene Wandflächen, so entstehen typisch „barocke" Formen, die äußerlich oft sehr ähnlich aussehen wie die hier genetisch abgeleiteten. Die Kurvierung dieser Gebilde ist jetzt nicht mehr durch die Kurvierung der Fläche, auf der sie aufliegen, bedingt und motiviert, sondern eine Kurvierung um ihrer selbst willen. Auch hier ist die Form nicht durch ein vorgestelltes „Biegen" entstanden, sondern im Grunde wieder durch ein Heraussehen aus einer größeren Einheit.

Bei Borromini sind diese Prozesse nicht nachweisbar. Dagegen scheinen sie bei der Entstehung mancher Gebilde des antiken „Barock" eine Rolle zu spielen.

Und endlich können solche Formen auch wirklich durch ein (vorgestelltes) „Biegen" ebener Formen entstehen. So entsteht z. B. das Gartentor der Villa Falconieri (Ricci Abb. 112) — nicht von Borromini! — aus einem entsprechenden ebenen Triumphbogentypus. Bezeichnenderweise treten so entstandene Formen geschichtlich erst etwas später auf als die more borrominesco erzeugten. Das „Biegen", das uns als die primitivste Entstehungsart solcher Formen erscheint, ist in Wirklichkeit ein verhältnismäßig seltener Fall.

Wenn man um diese Entstehungsmöglichkeiten weiß, kann man manchmal aus kleinen Einzelheiten der fertigen Gebilde den Prozeß der Entstehung erschließen. Sehr oft ist das aber auch bei genauester Betrachtung nicht möglich.

⟨22⟩ Die bisherigen Beobachtungen setzen uns also instand, wenn auch nur roh, more borrominesco zu produzieren und zu denken. Die alten Kennzeichnungen leisten das nicht. Man gebe sie irgend jemanden an und fordere ihn auf, auf Grund dieser Angaben irgendein charakteristisch borromineskes Gebilde zu skizzieren — etwa

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15. Ahnengebilde zu Abb. 16. — 16. Mittelfenster am Palazzo di propaganda fide. — 17. Ahnengebilde zu Abb. 18. — 18. Fenster am Palazzo di propaganda fide.

auf Grund der Angabe: Renaissanceformen umgestaltet durch „Freiheit der Persönlichkeit", oder durch „Wollen des Tiefraums". Dabei brauchen diese Kennzeichnungen an sich nicht falsch zu sein, sie sind nur nicht konkret genug.

Man kann diese Beobachtungen nun benutzen, um umgekehrt aus Gebilden, die äußerlich den Produkten dieses Prozesses ähneln, auf die Gebilde, aus denen sie möglicherweise genetisch entstanden sind, rückzuschließen, indem man solche flächenhafte Gebilde zu geschlossenen architektonischen Körpern ergänzt.

Ein solches Gebilde ist z. B. das berühmte Mittelfenster der Fassade des Collegio di propaganda fide (Abb. 16, 63). Macht man den angegebenen Versuch, so erhält man sogleich ein sinnvolles architektonisches Gebilde, wie der Grundriß Abb. 15 zeigt. Überdies kommt ein Gebilde von diesem Typus in Zeichnungen Borrominis vor: man vergleiche den Grundriß des

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15. Preparatory image for figure 16. – 16. Central window in the Palazzo di propaganda fide. – 17. Preparatory image for figure 18. – 18. Window in the Palazzo di propaganda fide.

One could now apply these observations to images with extrinsic similarities to the products of this process, and conversely derive those forms which might have provided the genetic source by supplementing such surface-bound imagery as self-contained architectural bodies.

For instance, such an image is the famous central window of the Collegio di Propaganda Fide (fig. 16, 63). If one performs such an experiment, then the result would be a meaningful architectural form as that of fig. 15. In fact, images of this type occur in the drawings of Borromini – compare the ground plan for the second level of the towers of S. Agnese in the design reproduced by Hempel, fig. 51. This only differs from our present conclusions by the placement of the four columns, which are easily moved because of their loose relation to the rest of the figure – as we shall soon see in an example. With a high degree of probability, one can also expect that a further genetic derivation would lead to an image from late antiquity. This has not yet been possible to demonstrate.

Insight into the origin of such an image has concurrently revealed its structure while the earlier approach did not permit it to be seen in terms of its form ('gestaltet zu sehen') and saw nothing more than a complicated orgy of columns and entablatures. It again becomes apparent how wrong that conception was which assumed the placement of architectural elements was geared to an effect of light and shadows – the theory of the 'painterly' Baroque. The meaning of such an image only reveals itself when one understands the specifically architectonic structure and relationship of its parts as it can only be grasped in a 'three-dimensional' image (Brinckmann).[52]

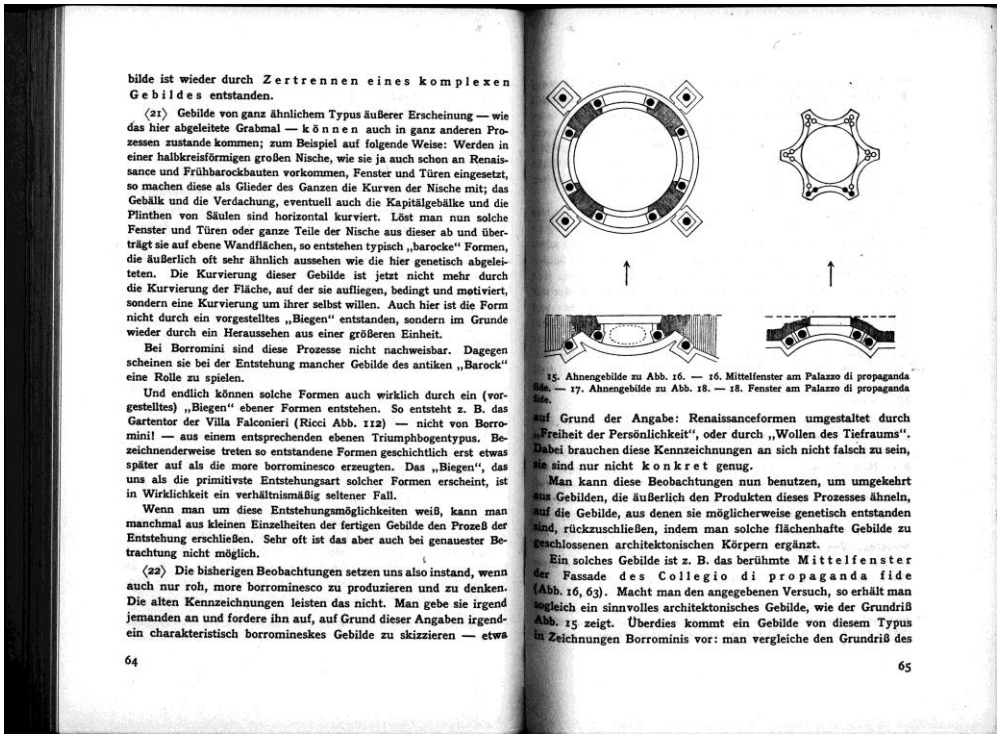
One can also derive the appearance of that image from another window of the same façade (fig. 18) which by came about by a splitting of the whole. This leads to imagery of a type appearing in a drawing of Borromini for the lantern of S. Ivo for example (fig. 17). It is another typically late antique structure, a variant of the 'circular temple of Baalbek'.

Of course, this heuristic procedure cannot be applied in every case. It will not for instance lead to an understanding of the third window type at the Propaganda Fide (fig. 64).

23. These three forms, each of which came about in a separate way, are aligned together on the façade of the Collegio so as to appear as variations of a single basic motif. Because of the identical treatment of details, the viewer is led to see them as 'variations on a theme', consistent in its diverse developments. To graphically experience the new dimension in aesthetic experience of 'architecture in motion' one can visually repeat these transitions practically.

[52] Although he was unfamiliar with the concrete genetic connection, Brinckmann correctly recognized that the window is part of a fully sculptural architectural image 'inserted' into the façade.

24. Images of this type also include the other procedure for transformation already familiar to us, 'the rearrangement of parts with no static function among the relationships', without upsetting the overall form ('die Gesamtgestalt verlassen').



bilde ist wieder durch Zertrennen eines komplexen Gebildes entstanden.

〈21〉 Gebilde von ganz ähnlichem Typus äußerer Erscheinung — wie das hier abgeleitete Grabmal — können auch in ganz anderen Prozessen zustande kommen; zum Beispiel auf folgende Weise: Werden in einer halbkreisförmigen großen Nische, wie sie ja auch schon an Renaissance und Frühbarockbauten vorkommen, Fenster und Türen eingesetzt, so machen diese als Glieder des Ganzen die Kurven der Nische mit; das Gebälk und die Verdachung, eventuell auch die Kapitälgebälke und die Plinthen von Säulen sind horizontal kurviert. Löst man nun solche Fenster und Türen oder ganze Teile der Nische aus dieser ab und überträgt sie auf ebene Wandflächen, so entstehen typisch „barocke" Formen, die äußerlich oft sehr ähnlich aussehen wie die hier genetisch abgeleiteten. Die Kurvierung dieser Gebilde ist jetzt nicht mehr durch die Kurvierung der Fläche, auf der sie aufliegen, bedingt und motiviert, sondern eine Kurvierung um ihrer selbst willen. Auch hier ist die Form nicht durch ein vorgestelltes „Biegen" entstanden, sondern im Grunde wieder durch ein Heraussehen aus einer größeren Einheit.

Bei Borromini sind diese Prozesse nicht nachweisbar. Dagegen scheinen sie bei der Entstehung mancher Gebilde des antiken „Barock" eine Rolle zu spielen.

Und endlich können solche Formen auch wirklich durch ein (vorgestelltes) „Biegen" ebener Formen entstehen. So entsteht z. B. das Gartentor der Villa Falconieri (Ricci Abb. 112) — nicht von Borromini! — aus einem entsprechenden ebenen Triumphbogentypus. Bezeichnenderweise treten so entstandene Formen geschichtlich erst etwas später auf als die more borrominesco erzeugten. Das „Biegen", das uns als die primitivste Entstehungsart solcher Formen erscheint, ist in Wirklichkeit ein verhältnismäßig seltener Fall.

Wenn man um diese Entstehungsmöglichkeiten weiß, kann man manchmal aus kleinen Einzelheiten der fertigen Gebilde den Prozeß der Entstehung erschließen. Sehr oft ist das aber auch bei genauester Betrachtung nicht möglich.

〈22〉 Die bisherigen Beobachtungen setzen uns also instand, wenn auch nur roh, more borrominesco zu produzieren und zu denken. Die alten Kennzeichnungen leisten das nicht. Man gebe sie irgend jemanden an und fordere ihn auf, auf Grund dieser Angaben irgendein charakteristisch borromineskes Gebilde zu skizzieren — etwa

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15. Ahnengebilde zu Abb. 16. — 16. Mittelfenster am Palazzo di propaganda fide. — 17. Ahnengebilde zu Abb. 18. — 18. Fenster am Palazzo di propaganda fide.

auf Grund der Angabe: Renaissanceformen umgestaltet durch „Freiheit der Persönlichkeit", oder durch „Wollen des Tiefraums". Dabei brauchen diese Kennzeichnungen an sich nicht falsch zu sein, sie sind nur nicht konkret genug.

Man kann diese Beobachtungen nun benutzen, um umgekehrt aus Gebilden, die äußerlich den Produkten dieses Prozesses ähneln, auf die Gebilde, aus denen sie möglicherweise genetisch entstanden sind, rückzuschließen, indem man solche flächenhafte Gebilde zu geschlossenen architektonischen Körpern ergänzt.

Ein solches Gebilde ist z. B. das berühmte Mittelfenster der Fassade des Collegio di propaganda fide (Abb. 16, 63). Macht man den angegebenen Versuch, so erhält man sogleich ein sinnvolles architektonisches Gebilde, wie der Grundriß Abb. 15 zeigt. Überdies kommt ein Gebilde von diesem Typus in Zeichnungen Borrominis vor: man vergleiche den Grundriß des

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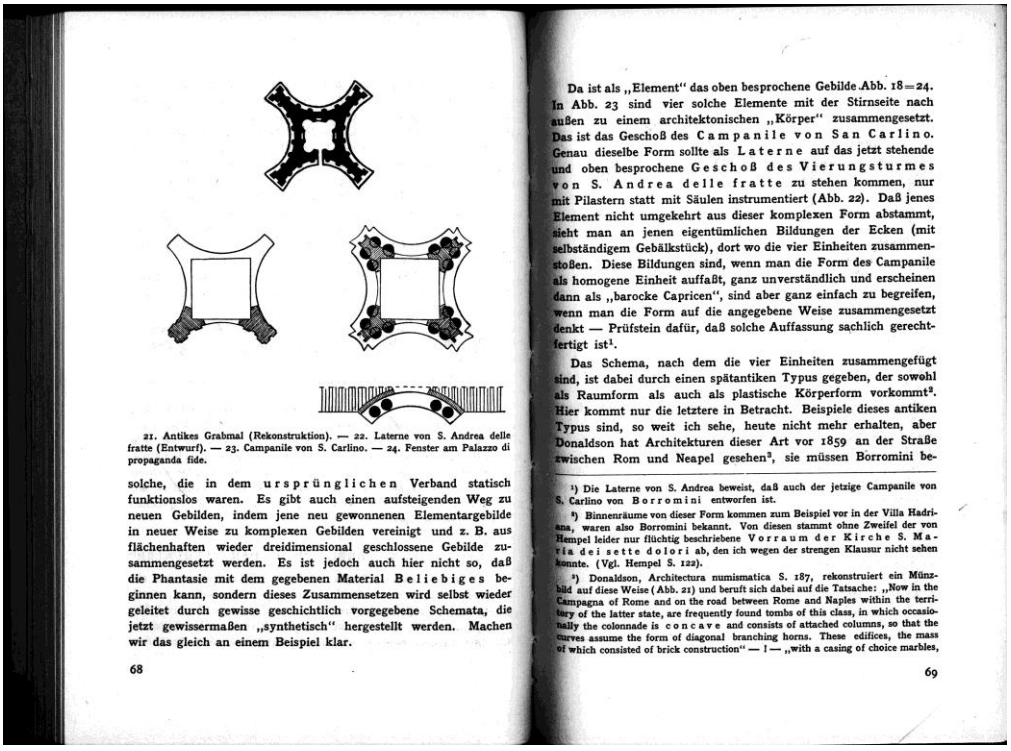
19. Window in the Palazzo di propaganda fide. – 20. Falconieri Tomb.

This was the way in which the image in fig. 19 led to that of the tomb in the Falconieri Chapel in S. Giovanni dei Fiorentini (fig. 20). The only variation has been the placement of the loose individual 'emancipated' columns. On the tomb, they have been pulled outward from the niches and turned in a way better seen in an illustration than described with words. Such a movement of the column is possible because in the constellation of fig. 64 it is already bearing no weight, with no static function – exactly the same circumstance which had made possible the movement in the centre of the bay of S. Carlino.

4 The origin of images from the elements

25. Up to this point we have only considered the process of origins in a descending order from a complex fully sculptural or spatial image to one simpler and more relief-like, or else that remaining on the same level and varying certain relatively independent parts of the image, especially those without a static function in the original arrangement. Beside this, there is also an ascending way of generating new imagery by which these newly generated elemental images are combined in new

ways to more complex images – again creating self-enclosed three-dimensional images on the basis of those more bound within a surface. In this case it is also not possible for the imagination to randomly produce anything conceivable with the material at hand. Such constructions are themselves also guided by certain historically proven patterns ('Schemata'), 'synthetically' one might say. Let us clarify this with an example.



21. Antikes Grabmal (Rekonstruktion). — 22. Laterne von S. Andrea delle fratte (Entwurf). — 23. Campanile von S. Carlino. — 24. Fenster am Palazzo di propaganda fide.

solche, die in dem ursprünglichen Verband statisch funktionslos waren. Es gibt auch einen aufsteigenden Weg zu neuen Gebilden, indem jene neu gewonnenen Elementargebilde in neuer Weise zu komplexen Gebilden vereinigt und z. B. aus flächenhaften wieder dreidimensional geschlossene Gebilde zusammengesetzt werden. Es ist jedoch auch hier nicht so, daß die Phantasie mit dem gegebenen Material Beliebiges beginnen kann, sondern dieses Zusammensetzen wird selbst wieder geleitet durch gewisse geschichtlich vorgegebene Schemata, die jetzt gewissermaßen „synthetisch" hergestellt werden. Machen wir das gleich an einem Beispiel klar.

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Da ist als „Element" das oben besprochene Gebilde Abb. 18—24. In Abb. 23 sind vier solche Elemente mit der Stirnseite nach außen zu einem architektonischen „Körper" zusammengesetzt. Das ist das Geschoß des Campanile von San Carlino. Genau dieselbe Form sollte als Laterne auf das jetzt stehende und oben besprochene Geschoß des Vierungsturmes von S. Andrea delle fratte zu stehen kommen, nur mit Pilastern statt mit Säulen instrumentiert (Abb. 22). Daß jenes Element nicht umgekehrt aus dieser komplexen Form abstammt, sieht man an jenen eigentümlichen Bildungen der Ecken (mit selbständigem Gebälkstück), dort wo die vier Einheiten zusammenstoßen. Diese Bildungen sind, wenn man die Form des Campanile als homogene Einheit auffaßt, ganz unverständlich und erscheinen dann als „barocke Capricen", sind aber ganz einfach zu begreifen, wenn man die Form auf die angegebene Weise zusammengesetzt denkt — Prüfstein dafür, daß solche Auffassung sachlich gerechtfertigt ist[1].

Das Schema, nach dem die vier Einheiten zusammengefügt sind, ist dabei durch einen spätantiken Typus gegeben, der sowohl als Raumform als auch als plastische Körperform vorkommt[2]. Hier kommt nur die letztere in Betracht. Beispiele dieses antiken Typus sind, so weit ich sehe, heute nicht mehr erhalten, aber Donaldson hat Architekturen dieser Art vor 1859 an der Straße zwischen Rom und Neapel gesehen[3], sie müssen Borromini be-

[1]) Die Laterne von S. Andrea beweist, daß auch der jetzige Campanile von S. Carlino von Borromini entworfen ist.

[2]) Binnenräume von dieser Form kommen zum Beispiel vor in der Villa Hadriana, waren also Borromini bekannt. Von diesen stammt ohne Zweifel der von Hempel leider nur flüchtig beschriebene Vorraum der Kirche S. Maria dei sette dolori ab, den ich wegen der strengen Klausur nicht sehen konnte. (Vgl. Hempel S. 122).

[3]) Donaldson, Architectura numismatica S. 187, rekonstruiert ein Münzbild auf diese Weise (Abb. 21) und beruft sich dabei auf die Tatsache: „Now in the Campagna of Rome and on the road between Rome and Naples within the territory of the latter state, are frequently found tombs of this class, in which occasionally the colonnade is concave and consists of attached columns, so that the curves assume the form of diagonal branching horns. These edifices, the mass of which consisted of brick construction" — ! — „with a casing of choice marbles,

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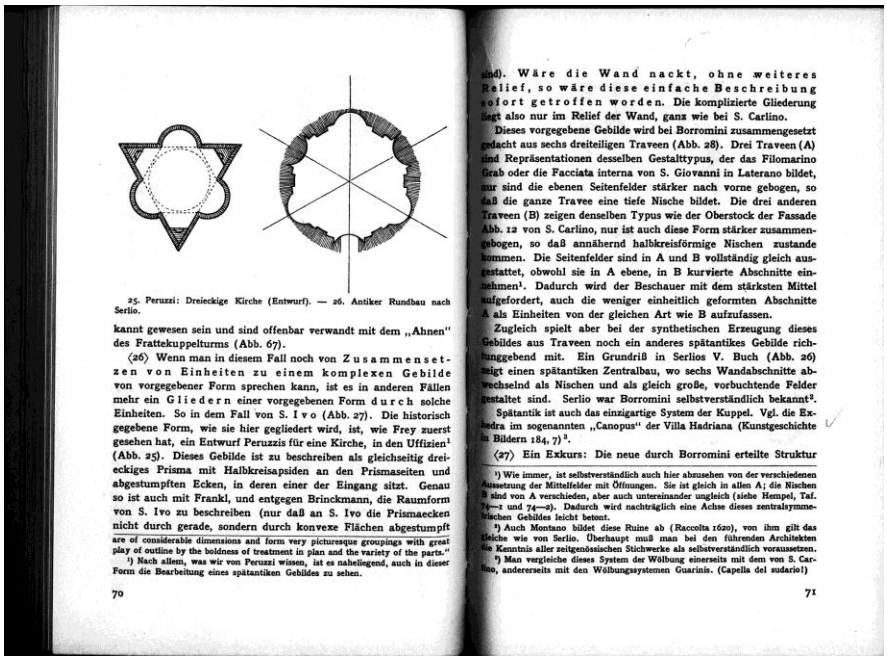
21. Ancient tomb (reconstruction). – 22. Lantern of S. Andrea delle fratte (design). – 23. Campanile of S. Carlino. – 24. Window in the Palazzo di propaganda fide.

There is an 'element' within the image discussed above (fig. 18-24). In fig. 23, four such elements are combined with their fronts turned outward to forma new architectural 'figure'. This is the upper level of the campanile of S. Carlino. An identical form was installed as the lantern at the upper level of the crossing tower of S. Andrea delle Fratte, with the only difference being a use of pilasters instead of columns (fig. 22). It is the unique construction of the corners (with independent entablature) at the spot where the four elements converge which confirms that this element has not been conversely derived from this more complex form. If one views the campanile as a homogeneous unity, these constructions are completely incomprehensible and have the appearance of a 'Baroque capriccio'. Yet they can be

understood very easily if one imagines the form as constructed as we have said – a touchstone for demonstrating that such a conception is objectively justified.[53]

The scheme according to which the four units have been joined was given by a late antique type which occurred as a spatial as well as a corporeally plastic form.[54] Only the latter is relevant to us presently. As far as I know, there are no extant ancient examples of this type, yet before 1859, Donaldson saw architecture of this type along the road between Rome and Naples, and these must have been known to Borromini and are clearly related to the 'ancestral' sources of the crossing tower of S. Andrea (fig. 67).[55]



25. Peruzzi: Dreieckige Kirche (Entwurf). — 26. Antiker Rundbau nach Serlio.

kannt gewesen sein und sind offenbar verwandt mit dem „Ahnen" des Frattekuppelturms (Abb. 67).

⟨26⟩ Wenn man in diesem Fall noch von Zusammensetzen von Einheiten zu einem komplexen Gebilde von vorgegebener Form sprechen kann, ist es in anderen Fällen mehr ein Gliedern einer vorgegebenen Form durch solche Einheiten. So in dem Fall von S. Ivo (Abb. 27). Die historisch gegebene Form, wie sie hier gegliedert wird, ist, wie Frey zuerst gesehen hat, ein Entwurf Peruzzis für eine Kirche, in den Uffizien[1] (Abb. 25). Dieses Gebilde ist zu beschreiben als gleichseitig dreieckiges Prisma mit Halbkreisapsiden an den Prismaseiten und abgestumpften Ecken, in deren einer der Eingang sitzt. Genau so ist auch mit Frankl, und entgegen Brinckmann, die Raumform von S. Ivo zu beschreiben (nur daß an S. Ivo die Prismaecken nicht durch gerade, sondern durch konvexe Flächen abgestumpft

are of considerable dimensions and form very picturesque groupings with great play of outline by the boldness of treatment in plan and the variety of the parts."

[1]) Nach allem, was wir von Peruzzi wissen, ist es naheliegend, auch in dieser Form die Bearbeitung eines spätantiken Gebildes zu sehen.

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sind). Wäre die Wand nackt, ohne weiteres Relief, so wäre diese einfache Beschreibung sofort getroffen worden. Die komplizierte Gliederung liegt also nur im Relief der Wand, ganz wie bei S. Carlino.

Dieses vorgegebene Gebilde wird bei Borromini zusammengesetzt gedacht aus sechs dreiteiligen Traveen (Abb. 28). Drei Traveen (A) sind Repräsentationen desselben Gestalttypus, der das Filomarino Grab oder die Facciata interna von S. Giovanni in Laterano bildet, nur sind die ebenen Seitenfelder stärker nach vorne gebogen, so daß die ganze Travee eine tiefe Nische bildet. Die drei anderen Traveen (B) zeigen denselben Typus wie der Oberstock der Fassade Abb. 12 von S. Carlino, nur ist auch diese Form stärker zusammengebogen, so daß annähernd halbkreisförmige Nischen zustande kommen. Die Seitenfelder sind in A und B vollständig gleich ausgestattet, obwohl sie in A ebene, in B kurvierte Abschnitte einnehmen[1]. Dadurch wird der Beschauer mit dem stärksten Mittel aufgefordert, auch die weniger einheitlich geformten Abschnitte A als Einheiten von der gleichen Art wie B aufzufassen.

Zugleich spielt aber bei der synthetischen Erzeugung dieses Gebildes aus Traveen noch ein anderes spätantikes Gebilde richtunggebend mit. Ein Grundriß in Serlios V. Buch (Abb. 26) zeigt einen spätantiken Zentralbau, wo sechs Wandabschnitte abwechselnd als Nischen und als gleich große, vorbuchtende Felder gestaltet sind. Serlio war Borromini selbstverständlich bekannt[2].

Spätantik ist auch das einzigartige System der Kuppel. Vgl. die Exedra im sogenannten „Canopus" der Villa Hadriana (Kunstgeschichte in Bildern 184, 7)[3].

⟨27⟩ Ein Exkurs: Die neue durch Borromini erteilte Struktur

[1]) Wie immer, ist selbstverständlich auch hier abzusehen von der verschiedenen Aussetzung der Mittelfelder mit Öffnungen. Sie ist gleich in allen A; die Nischen B sind von A verschieden, aber auch untereinander ungleich (siehe Hempel, Taf. 73—74 und 74—a). Dadurch wird nachträglich eine Achse dieses zentralsymmetrischen Gebildes leicht betont.

[2]) Auch Montano bildet diese Ruine ab (Raccolta 1620), von ihm gilt das gleiche wie von Serlio. Überhaupt muß man bei den führenden Architekten die Kenntnis aller zeitgenössischen Stichwerke als selbstverständlich voraussetzen.

[3]) Man vergleiche dieses System der Wölbung einerseits mit dem von S. Carlino, andererseits mit den Wölbungssystemen Guarinis. (Capella del sudario!)

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25 Peruzzi: Triangular church (design). – 26. Ancient round structure following Serlio.

[53] The lantern of S. Andrea proves that the current campanile of S. Carlino was designed by Borromini.

[54] Interior spaces of this sort exist in the Villa of Hadrian and were therefore known to Borromini. There can be no doubt that Borromini designed the vestibule of the church of S. Maria dei sette dolori, which Hempel unfortunately discussed only very briefly, and which the religious practices prevented me from seeing (cf. Hempel 122).

[55] Thomas Leverton Donaldson, *Architectura numismatica Architectural medals of classic antiquity: illustrated and explained by comparison with the monuments and the descriptions of ancient authors, and copious text*, London: Day, 1859, 187, offers a reconstruction of a coin image derived in this way (fig. 21) and conjures the fact that: 'Now in the Campagna of Rome and on the road between Rome and Naples within the territory of the latter state, are frequently found tombs of this class, in which occasionally the colonnade is concave and consists of attached columns so that the curves assume the form of diagonal branching horns. These edifices, the mass of consist of brick construction [!] with a casing of choice marbles are of considerable dimensions and form very picturesque groupings with great play of outline by the boldness in treatment of plan and the variety of the parts.'

26. If an example such as this might be described as an assembly of units into a complex whole, then there are others which appear more as an articulation of a given form by such units. This is the case at S. Ivo (fig.27). As Frey became the first to recognize, this historically existing form as it consists here can be found in a church design by Perruzzi preserved in the Uffizi (fig. 25).[56] This form might be described as an equilateral triangular prism with semi-circular apses on the sides of the prism, and rounded corners with the entrance located in one of these. We can follow Frankl and oppose Brinckmann in describing the spatial form of S. Ivo in exactly the same terms (with the only difference that the corners at S. Ivo are not flattened but characterized by convex surfaces). If the wall were bare and without any relief effect, then this simple description would have been reached immediately. The complicated articulation is entirely limited to the relief of the wall, exactly as at S. Carlino.

Borromini conceives the given image as composed from six tripartite bays (fig. 28). Three bays (A) belong to the same formal type as the Filomarino Tomb or the interior façade of S. Giovanni in Laterano except that the flat lateral fields are bent more strongly forward so that the entire bay forms a deep niche. The three other bays (B) are of the same type as the upper facade story of S. Carlino in fig. 12, but this form is also bent together more strongly so as to produce nearly semi-circular niches. In A and B, the lateral fields are given identical form, although they include flat sections in A and curved sections in B.[57] This induces the viewer most sharply to conceive the less unified form of the A sections as being of the dame type as the B sections.

In the synthetic generation of this image, there is again an influence from a late antique example. A ground plan in the fifth book by Serlio (fig. 26) shows a late antique centralized building with six sections of wall alternating between niches and evenly sized forward bulging fields. Borromini of course knew Serlio.[58]

The unique system of the dome also derives from late antiquity. See the exedra in the so-called 'canopus' at the Villa Hadriana (Franz Winter, *Kunstgeschichte in Bildern Systematische Darstellung der Entwickelung der Bildenden*

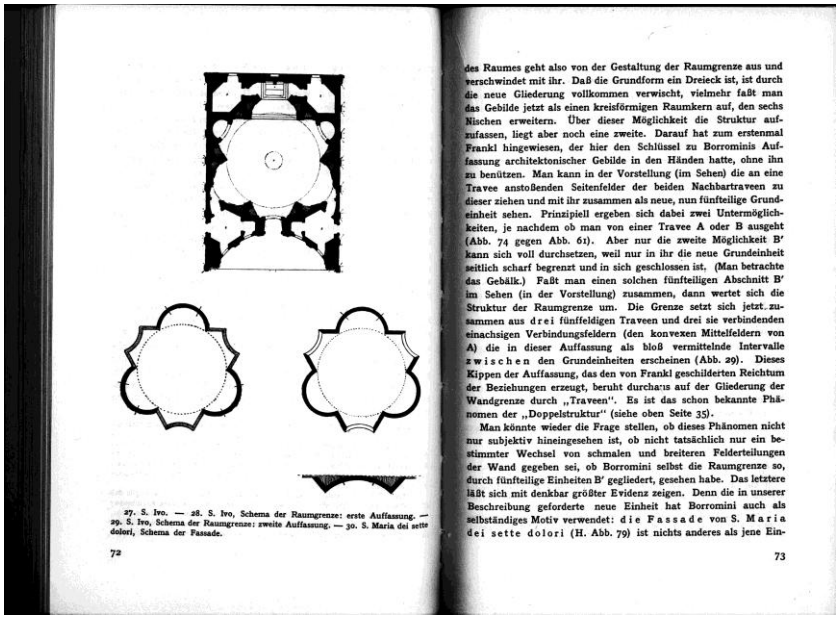
[56] Our knowledge of Peruzzi suggests that this form might also be based on a revision of a late antique model.

[57] As always, one must again omit the various suspensions of the perforated central fields. They are alike in all A sections; the B niches differ from the A, but are also not identical to one another (cf. Hempel, plates 74-1 and 74-2). This retroactively lends a light emphasis to an axis within this centralized symmetrical image.

[58] This ruin was also illustrated by Giovanni Battista Montano, *Raccolta de' templij et sepolcri designati dall'antico*, 1620 [Rome: Rossi, 1638], and the same is true of him as Serlio. One must assume that the leading architects were familiar with all contemporary publications of engravings.

Kunst Vom klassischen Altertum bis zur neueren Zeit, Leipzig: Seemann, 1900, *Abteilung I Das Altertum*, 184, 7).[59]

27. An excursus: The new spatial structure conferred by Borromini begins from the spatial border and disappears along with it. The fact that the basic form is a triangle is completely blurred by its new articulation so that the image is now perceived as a circular spatial core expanded by six niches. However, there is also another possible interpretation of the structure superimposed upon this. Frankl became the first to point this out, and held the key to Borromini's conception of architectural imagery without using it. In looking at one bay, we can in our imagination (our vision) combine the lateral fields adjacent to the neighbouring bays and together see a different basic unit consisting of five parts. This theoretically includes two possible subsidiary units depending on whether the viewer begins with the bay A or B (fig. 76 as against fig. 61). Yet, it is only the second possibility B' which is completely acceptable because only in this way is the new basic unity clearly delimited at the sides and self-enclosed. (One should consider the entablature). In concentrating on one of these five part sections B' in our view (our imagination), the structure of the spatial border is changed in its value. Now the wall appears to consist of three bays including five fields each, with these being connected by intervening fields (the convex central fields of A) appearing in this conception as mere transitional intervals between the basic units (fig. 29). This shift in the conception which arises from the richness of relations observed by Frankl, is



27. S. Ivo. — 28. S. Ivo, Schema der Raumgrenze: erste Auffassung. — 29. S. Ivo, Schema der Raumgrenze: zweite Auffassung. — 30. S. Maria dei sette dolori, Schema der Fassade.

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des Raumes geht also von der Gestaltung der Raumgrenze aus und verschwindet mit ihr. Daß die Grundform ein Dreieck ist, ist durch die neue Gliederung vollkommen verwischt, vielmehr faßt man das Gebilde jetzt als einen kreisförmigen Raumkern auf, den sechs Nischen erweitern. Über dieser Möglichkeit die Struktur aufzufassen, liegt aber noch eine zweite. Darauf hat zum erstenmal Frankl hingewiesen, der hier den Schlüssel zu Borrominis Auffassung architektonischer Gebilde in den Händen hatte, ohne ihn zu benützen. Man kann in der Vorstellung (im Sehen) die an eine Travee anstoßenden Seitenfelder der beiden Nachbartraveen zu dieser ziehen und mit ihr zusammen als neue, nun fünfteilige Grundeinheit sehen. Prinzipiell ergeben sich dabei zwei Untermöglichkeiten, je nachdem ob man von einer Travee A oder B ausgeht (Abb. 74 gegen Abb. 61). Aber nur die zweite Möglichkeit B' kann sich voll durchsetzen, weil nur in ihr die neue Grundeinheit seitlich scharf begrenzt und in sich geschlossen ist. (Man betrachte das Gebälk.) Faßt man einen solchen fünfteiligen Abschnitt B' im Sehen (in der Vorstellung) zusammen, dann wertet sich die Struktur der Raumgrenze um. Die Grenze setzt sich jetzt zusammen aus drei fünffeldigen Traveen und drei sie verbindenden einachsigen Verbindungsfeldern (den konvexen Mittelfeldern von A) die in dieser Auffassung als bloß vermittelnde Intervalle zwischen den Grundeinheiten erscheinen (Abb. 29). Dieses Kippen der Auffassung, das den von Frankl geschilderten Reichtum der Beziehungen erzeugt, beruht durchaus auf der Gliederung der Wandgrenze durch „Traveen". Es ist das schon bekannte Phänomen der „Doppelstruktur" (siehe oben Seite 35).

Man könnte wieder die Frage stellen, ob dieses Phänomen nicht nur subjektiv hineingesehen ist, ob nicht tatsächlich nur ein bestimmter Wechsel von schmalen und breiteren Felderteilungen der Wand gegeben sei, ob Borromini selbst die Raumgrenze so, durch fünfteilige Einheiten B' gegliedert, gesehen habe. Das letztere läßt sich mit denkbar größter Evidenz zeigen. Denn die in unserer Beschreibung geforderte neue Einheit hat Borromini auch als selbständiges Motiv verwendet: die Fassade von S. Maria dei sette dolori (H. Abb. 79) ist nichts anderes als jene Ein-

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27. S. Ivo. – 28. S. Ivo, Scheme of the spatial border: first design. – 29. S. Ivo. Scheme of the spatial border: second design. – 30. S. Maria dei sette dolori, scheme of the façade.

[59] Compare this dome system with that of S. Carlino on the one hand and with the system of vaulting in Guarini on the other – the Capella del Sudario!

definitely based on the articulation of the wall in 'bays'. This is the well known phenomenon of 'double structure' (section 4 above).

One might well again pose the question as to whether this might not simply be something which we read into the matter subjectively, whether there is not in fact only one certain alteration between narrower and wider sections of wall and whether Borromini himself would have seen its as structured by five-part B' units. The latter can be shown to be the case with the greatest conceivable evidence. That unit which the other mode of viewing would require was used again by Borromini as an independent motif – the facade of S. Maria dei sette dolori (Hempel, fig. 79) is nothing other than the B' unit of wall from S. Ivo.[60] How a new image is generated in this way is a phenomenon with which we are by now completely familiar. A condition of this is that the wall is already viewed as structured in this way. Yet the unit on which this is based was not original to the interior of S. Ivo, but was already present in the design for the upper story of the S. Carlino facade. We have already shown that that was based on the bay of the crossing tower of S. Andrea delle Fratte). Another condition for the development of the facade of S. Carlino is that the interior walls be seen as articulated in surface units – a proof of which can be seen in the drawings of Borromini himself (Hempel, fig. 9).[61]

28. Exactly the same situation we see here in S. Ivo is also present in the completed interior of S. Carlino. Here again, Borromini recognized the possibility of assembling an existing ancient form typified in the core space of S. Lorenzo in Milan (Hempel) in terms of bays, and of altering the structure by the articulation of the bays. In this case, the goal he was seeking was a rectangular prism with rounded prismic corners and inflected niches at the sides of the prism (deep niches on the narrow sides and shallow niches on the longer sides). Up to the main entablature, the 'natural' articulation of the wall would have been four equal bent surfaces N of equal value among themselves and united by four flat fields. Borromini reinterprets the structure by emphasizing four units along the wall of the type of that 'bay' which also appeared in two variants on the facade of the same building. He composed this form from four T sections and the four intermittent fields.

As we have already shown, there is proof here too that Borromini saw the T sections in this image as independent units. This is evident from drawings by Borromini (fig. 55), as well as in the fact that the altar screen includes this basic form independently with balustrades (fig. 54).

[60] This was already recognized by Hempel: 'A complex of forms developed in the interior is boldly transferred to the surface of a facade.' It was not realized that when seen in more general terms, this process was completely typical.

[61] According to the traditional conception, this dissection of the unified form in drawings appeared to be a mere economical technicality to avoid repeating something four times which is already completely determined in a single rendition. This is incorrect.

5. Origin of images by projective reinterpretation

29. We are now familiar with some of the most important procedures according to which the new – typically High Baroque – imagery came about: by 'splitting complex images into surface-bound units', by 'adjusting the formal relations among the units', involving a shift of architectural elements with no static importance, an then a 'synthesis of complex images from surface-bound elements' and 'the articulation of complex images with flat units derived by process I'. An epiphenomenon of the latter is the 'double structure' which assumed an important place in the High Baroque. All of these processes are closely related to the extent that they are all based on the same conception of the structure of architectural imagery, based in an atomistic conception (see section 59 below). Further examples can be found if we sift through the treasure of Borromini drawings.

Another important and typical transformational process is the 'projective reinterpretation' of images.

The principle of this transformation is – interpreting the projected form of an architectural image as the form of another projectively related image.

Let us take an image A as an example, the top level of the towers on the design for S. Agnese (Hempel, fig. 51). The perspectival view from a low vantage point (p') yields a perspective image p' (A). This 'image' is then evaluated as a perspective view seen in a normal height (p) of the subject p (A') showing the image A'. In this manner, the image A with a horizontal entablature become the image A' with an entablature bent vertically. (Such images are visible in the tombs of the Cardinals Corrado and Annibaldeschi for instance in S. Giovanni in Laterano, Rossi, II, 40 and 42). This image A' is the goal of the process. Here, the curve is also not derived by a simple bending of the entablature, but rather by a far 'abstracter' procedure – it is a mistake to assume that it was conceivable to 'bend' architecture in any historical period.

The images thus genetically interrelated are projectively affinitive. They might be described as various spatial elaborations of the same motif. Such projective transformations had already been used in antiquity to achieve typically 'Baroque' imagery. Classical examples of this have been given by Kohl.[62]

30. This principle provided the basis for the much discussed tombs in San Giovanni in Laterano (an example being fig. 59). In each of them a new image is derived by the projective transformation of another. An optical illusion is not the goal of this, but rather a 'duplicate significance' in the image – Hempel has very correctly noted that no such illusion could be achieved with such a combination of foreshortened and unforeshortened elements. One might imagine the sagginess of the entablature as the relief image of a deep niche, although its waviness might also

[62] Heinrich Kohl, *Kasr Firaun in Petra*, Leipzig: J.C. Hinrichs 1910, Wissenschaftliche Veröffentlichung der Deutschen Orient-Gesellschaft, 13. Particularly his fig. 34 in comparison to fig. 35.

be taken as an aesthetic value unto itself – just as the horizontal undulation in the facade of S. Carlo. The meaning of such imagery and the fascination it exerts lies precisely in this 'double structure' which is related not in its means but by its goal and nature to the 'double structure' of S. Carlino and S. Ivo. In viewing such images we are shown a double-sidedness of things, a vacillation between appearance and actuality, the power of the subjective. As attempts at optical illusion, these would be an unsuccessful gimmick. When they are properly viewed, they include an 'ostensive philosophy'.

The perspective colonnade of the Palazzo Spada has nothing to do with these phenomena. After all, its effect is based on the fact that an objective renewal of its elements is not immediately recognized, as 'illusion' and the subsequent 'disappointment'. Here, one can see how superficial a class of 'images working with perspective foreshortening' would be. Within the oeuvre of Borromini, the Spada-colonnade is a peripheral and 'shallow' work.

For its genetic derivations from ancient models, see Hans Sedlmayr, Ein Nachwort zum Scala-Regia Streit (to be published soon).

6. Latent transformations

31. 'Latent transformations' are present where the structure of an image had already changed for Borromini without there being a visibly apparent form of the new structure.

Designs are preserved by Borromini in which he essentially took over previous spatial forms with no alteration, as in the oval design for S. Carlo (Hempel, fig. 7) and in the vertical oval design for the Collegio di Propaganda fide (Hempel, fig. 57), which differs only in the proportions of its oval.[63] Genetically, both are derived from Vignola's S. Anna dei Palafrenieri and in their secondary characteristics from S. Giacomo degli Incurabili (al Corso) by Volterrano-Maderna.[64] At first glance, these only seem to distinguish themselves in their secondary qualities. Yet this is only apparent, because in the conception of Borromini its walls are articulated in the same way as in the later designs for S. Carlo (constructed in bays). Here the articulation has not attained an objective expression (no physical projection). It would be incorrect to say that Borromini had only made slight changes to those traditional images with a few insignificant adjustments; even in these instances the changes run deep. Even when they are seen in this way it is obvious that something completely new has been created in relation to the previous images even if the form of the image shows very few changes. They latently possess the structure which comes through in his later designs.

[63] Hempel has mistakenly taken this to be a lateral oval.

[64] Where the design by Volterrano is itself genetically derived from S. Anna dei Palafrenieri and the Perruzzi design for S. Giacomo (Hempel).

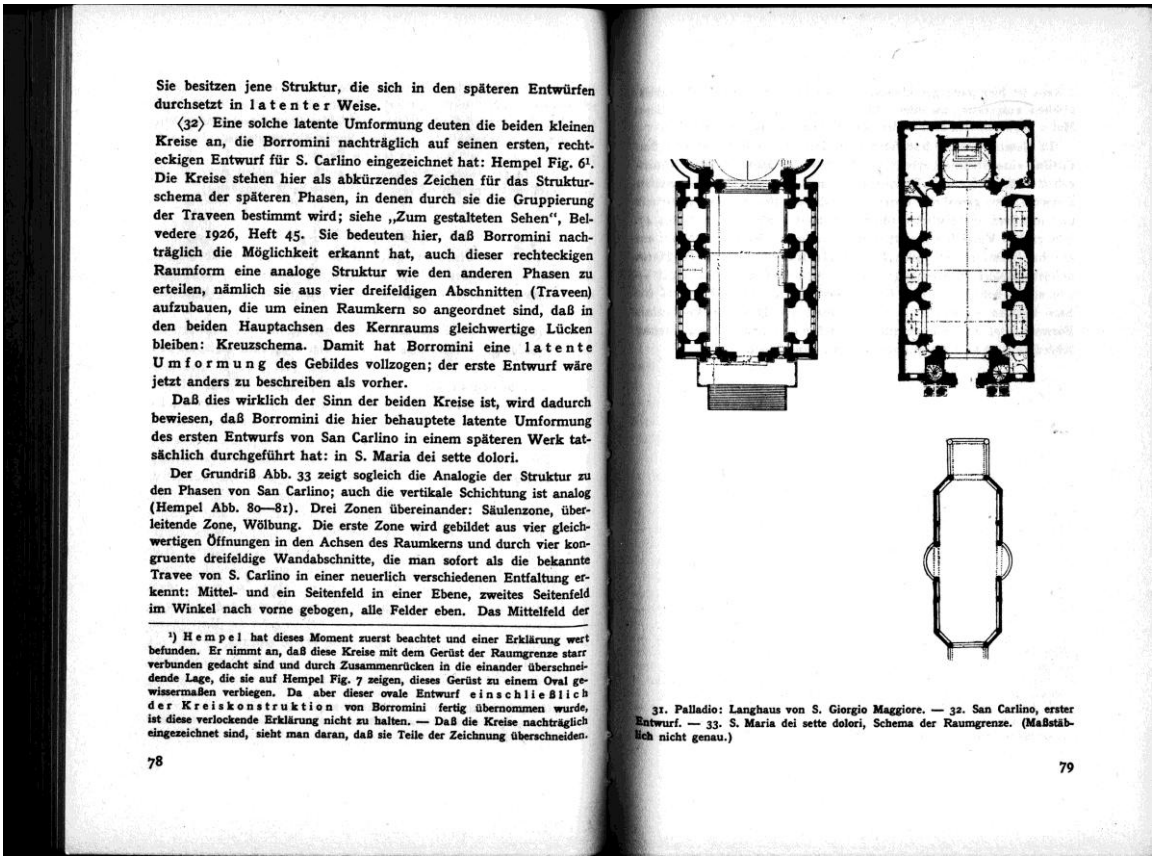
32. Such a latent transformation is indicated by the two small circles which Borromini later added to his first rectangular design for S. Carlino – Hempel, fig. 6.[65] Here the circles are abbreviated signs for the structural scheme of the later phases where they indicate the grouping of the bays – see Hans Sedlmayr, 'Zum gestaltenden Sehen', *Belvedere Kunst und künstlerische Kultur der Vergangenheit Zeitschrift für Sammler und Kunstfreunde*, 9-10, 3, 45, March 1926, 57-62. Here they indicate that Borromini later recognized the possibility that a structure analogous to the other phases could be given to this rectangular spatial form, namely to construct it from four sections (bays) of three fields each, arranged around the core space in such a way that even gaps remain in both main axes of the central space – a cross scheme. With this Borromini has achieved a latent transformation of the image; the first design would now be differently described than previously.

The meaning of the latent transformation of the first design of S. Carlo is confirmed by the fact that these two circles occur again in a later work of Borromini – S. Marie del sette dolori.

The ground plan in fig. 33 reveals the analogy of structure to the phases of San Carlino; even the layering is analogous (Hempel, fig. 80-81). There are three zones superimposed one above the other: the area of the columns, the transitional zone and the vaulting. The first zone is composed of four equal openings at the axes of the central space and the four congruent tri-partite wall segments immediately recognizable as the well-known bay from S. Carlino in a new variant – the centre and the lateral fields are in a single surface, the second lateral field curved forward at an angle with all sections flat. The central field of the bay is completely closed here, the side fields exposed with semi-circular niches and below them doors with flat lintels. This motif also refers back to San Carlino, as Hempel already noted.

In this image, Borromini lent the first design of San Carlino a structure placing it on a level with the spatial compositions of the following phase – with the pure oval of the second design, the wavy forms of the third and fourth design and the fifth design as it was realized. See fig. 44-47. This structural relation is most clear from a cursory comparison – by striking it to an oval core it would be possible to translate the spatial shell of S. Maria dei sette dolori into the oval design of San Carlino like a shoe on its bracket. In this way the forms cohere into a context in Borromini's thinking as they would never relate to one another from a 'naïve' point of view.

[65] Hempel first considered this aspect and found it worth explaining. He assumed that the circles were rigidly bound to the structure of the wall and in a certain sense bends this structure into an oval by contraction into the overlapping constellation shown in Hempel, fig. 7. Yet since this oval design was taken over by Borromini with the inclusion of the circular construction this tempting explanation cannot be accepted. Since the circles overlap parts of the drawing, one can see that they have been added later.



Sie besitzen jene Struktur, die sich in den späteren Entwürfen durchsetzt in latenter Weise.

〈32〉 Eine solche latente Umformung deuten die beiden kleinen Kreise an, die Borromini nachträglich auf seinen ersten, rechteckigen Entwurf für S. Carlino eingezeichnet hat: Hempel Fig. 6[1]. Die Kreise stehen hier als abkürzendes Zeichen für das Strukturschema der späteren Phasen, in denen durch sie die Gruppierung der Traveen bestimmt wird; siehe „Zum gestalteten Sehen", Belvedere 1926, Heft 45. Sie bedeuten hier, daß Borromini nachträglich die Möglichkeit erkannt hat, auch dieser rechteckigen Raumform eine analoge Struktur wie den anderen Phasen zu erteilen, nämlich sie aus vier dreifeldigen Abschnitten (Traveen) aufzubauen, die um einen Raumkern so angeordnet sind, daß in den beiden Hauptachsen des Kernraums gleichwertige Lücken bleiben: Kreuzschema. Damit hat Borromini eine latente Umformung des Gebildes vollzogen; der erste Entwurf wäre jetzt anders zu beschreiben als vorher.

Daß dies wirklich der Sinn der beiden Kreise ist, wird dadurch bewiesen, daß Borromini die hier behauptete latente Umformung des ersten Entwurfs von San Carlino in einem späteren Werk tatsächlich durchgeführt hat: in S. Maria dei sette dolori.

Der Grundriß Abb. 33 zeigt sogleich die Analogie der Struktur zu den Phasen von San Carlino; auch die vertikale Schichtung ist analog (Hempel Abb. 80—81). Drei Zonen übereinander: Säulenzone, überleitende Zone, Wölbung. Die erste Zone wird gebildet aus vier gleichwertigen Öffnungen in den Achsen des Raumkerns und durch vier kongruente dreifeldige Wandabschnitte, die man sofort als die bekannte Travee von S. Carlino in einer neuerlich verschiedenen Entfaltung erkennt: Mittel- und ein Seitenfeld in einer Ebene, zweites Seitenfeld im Winkel nach vorne gebogen, alle Felder eben. Das Mittelfeld der

[1]) Hempel hat dieses Moment zuerst beachtet und einer Erklärung wert befunden. Er nimmt an, daß diese Kreise mit dem Gerüst der Raumgrenze starr verbunden gedacht sind und durch Zusammenrücken in die einander überschneidende Lage, die sie auf Hempel Fig. 7 zeigen, dieses Gerüst zu einem Oval gewissermaßen verbiegen. Da aber dieser ovale Entwurf einschließlich der Kreiskonstruktion von Borromini fertig übernommen wurde, ist diese verlockende Erklärung nicht zu halten. — Daß die Kreise nachträglich eingezeichnet sind, sieht man daran, daß sie Teile der Zeichnung überschneiden.

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31. Palladio: Langhaus von S. Giorgio Maggiore. — 32. San Carlino, erster Entwurf. — 33. S. Maria dei sette dolori, Schema der Raumgrenze. (Maßstäblich nicht genau.)

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31 Palladio: Nave of S. Giorgio Maggiore. – 32. San Carlino, first design. – 33. S. Maria dei sette dolori, scheme of the spatial border (not to scale).

PART TWO
THE ARCHITECTURE OF BORROMINI

CHAPTER THREE
ON THE THEORY OF BORROMINI'S ARCHITECTURE

1. Preliminary Theoretical Remarks

I. A transition from the individual works of Borromini to a theory of his art cannot be achieved by simply extracting the common element in each of the works. There is no evidence that those factors common to all of the works are also aesthetically essential aspects – or as Benedetto Croce stated it so well that the empirical person is also identical with the aesthetic person.[66] The point is rather to

[66] In its positive sense, this tenet belongs to that part of the comparative study of art devoted to the work of individual artists.

grasp the central idea or more precisely, the system of ideas in the art of Borromini, the centres from which the greatest amount becomes understandable or derivable – which is not equally clear or vivid in each individual work. This leads to differences of scale and value among the works ('main works') with no subjective element, but finding the data of judgment within the sphere of things being adjudged (Goethe).

XV. The task is therefore similar to that present in the description of the individual works of art. Here again, the goal is to derive individual characteristics of a whole from given pivotal qualities. In this, the goal of a (theoretical) description of an oeuvre distinguishes itself from the description of a single self-contained image in one essential aspect, namely in the fact that this involves an extension in the temporal dimension. This raises difficulties of a distinct sort, which the study of art has not yet come to terms with. It is therefore also a stroke of luck that the focal complex of ideas in the art of Borromini which permits a rigorous completion of the study on this point remains very constant through time. A certain sphere of ideas already appearing embryonically in the earliest works, is framed ever more clearly in the later works, and finally achieves complete clarity in the 'final' work. The irrational aberrations from this very simple, focussed and well rounded process are minimal and can be ignored for the moment.

This consistent and determined autonomous development of a primary complex of ideas is partially covered and enshrouded by shifting secondary qualities of the works and particularly by a change in its 'expressive character'. As we shall see, this is to be understood as the result of a change in the psychic constitution of Borromini – psychologically.

XVI. The question of the strict decidability is similar to that about the descriptions of the individual works. Above all, it will become necessary to operate with the criterion that a description is 'good' if it renders things comprehensible which would hitherto have necessarily been taken on trust. What matters is not to once again derive the characteristics of the individual works additively from central formal principles – to repeat what we have already done, but instead to grasp general characteristics of the oeuvre as such. An example would be the question of the relationship to the given architectural commissions, functions, peculiarities of the drawings etc. Even when something is understood as inconsistent with the stated goal, then this is a greater comprehension than simply recording the bare fact itself.

On the other hand it is also necessary for all of the characteristics being evoked to themselves present a result of the study of the individual images – both the central elucidating characteristics as well as the others which these render as peripheral. This also indirectly subordinates the theory of the oeuvre to those criteria which are decisive in the description of the individual images, and particularly also the 'historical' criterion.

XVII. Since the works have not been realized by a 'pure' spirit, but rather by people who are themselves biological and psychological entities, it becomes unavoidable to consider certain psychological facts in the course of explanation.

Where this is done, every claim must necessarily conform to the results of the relevant psychological discipline. More of this shall be said in the prefatory remarks to the fifth chapter.

There are other more refined processes being developed at the moment, and especially those which will render strictly verifiable those statements about 'movements' within constellations of ideas.

2. The idea of a 'movable' architecture

33. The goal of Borromini's architecture and its core is the idea of a 'movable' – variable – structure of architectural imagery. Our studies of the individual works have elaborately revealed the totality of the phenomena subsumed under this rubric. Only in some of the later main works does this idea reveal itself in its complete purity, yet it is also included as a germ in many other works.

It appears most forcefully in the version of S. Carlo alle quattro fontane as completed with the facade. With the addition of the two-storied facade, what had been latently present from the beginning becomes completely clear. From the facade, the final work by Borromini (built beginning in 1663), the viewer is given an imperative directive of how the structure of the walls ('der Raumgrenze') is to be conceived. Such a directive is absent from S. Ivo, where the articulation of the interior is carried through more clearly than in the earlier interior of S. Carlo, and its principle also permeates the vaulting. In this, the completion of S. Carlino, beginning in 1663, presents an advance not merely beyond the earlier version with the one-storied facade (1634 ff.), but also beyond S. Ivo (1642). There are further perfected realizations of these thoughts in the tomb niches in S. Giovanni in Laterano and in the windows of the Collegio di Propaganda Fide although the same goal is there achieved by other means.

These images provide the only embodiments of an idea which in the history of world architecture has so far never again been expressed. If this ever occurs, then the apparently immutable limits of architecture will be transgressed and very closely approach music – as closely as the materials and their modes of appearance permit. This is not in the sense of the hackneyed phrase of 'petrified music' but in one more rigorously comprehensible. The analogy is based in the objective relationship of certain categories which present themselves now and again. Both cases include for instance the 'unfolding' of a 'motif' which then solidifies in its transformations. Those able to disregard the different nature of the material can experience the similarity very strongly. When the essential qualities of images such as the windows of the Collegio di Propaganda Fide were shown to subjects in experiments, they spontaneously and independently of one another characterized the impression in terms of analogous processes known to them from the field of music: 'It is essentially the same as variations on a theme'. Some of them saw the 'double structure' of S. Carlino as the familiar phenomenon the 'enharmonic

confusion' within a different context. The very possibility of cogently imagining the structure of architectural imagery is proof that an objective relationship exists.

While such phenomena are fundamental to large numbers of musical compositions, in architecture, they appear to originate and to end with Borromini.[67] This can be no surprise if one considers how diametrically it opposes the deeply rooted conception of architecture as consisting of stabile and rigid objects – associating this even with the 'essence' of architecture itself. In the demands this places on the viewer, it is not basically any greater than listening to our European music, but it merely seems strange and in a certain sense 'unnatural'. And thus, this achievement of Borromini had almost no effect, while the easily grasped external characteristics of his works exercised the strongest possible influence. After working toward it gropingly, the embodiment of this idea was the result of the deepest intellectual tension for Borromini himself. It was only in his final works that he discovered the possibility of completely realizing it. Images coming about in this manner are in every sense final or 'extreme'.

34. What here became the principle of artistic structure, was at the beginnings of Borromini a means for creating a great manifold of new imagery on the basis of a relatively small number of late antique examples – which has a 'style' appealing to the tendency of the time.

Ideally at least, the manifold of forms presented themselves in a completely new manner to his 'intellectual eye'. He saw architectural imagery as having a new significance without the character of objects. Objects are rigid and only changeable within certain limitations, but not to be affected in their inner structure. One can only work around the outer edges or assemble a number of them additively to form a new composition. A coagulation of their structure, the intermingling of a number of them as in dreams and a rejection of a fixed aggregate state are also signs of non-objective character. That is not the conception of Borromini. In retracing the transformative processes which led to the new imagery of Borromini we have seen how he experiences the manifold of architectural 'objects'. He sees the apparently rigid images as loose aggregates gifted with the potential faculty of decomposing into 'elements'. The elements themselves are the ultimate units of his imagination, and not rigid but mobile and potentially include various elaborations within themselves. In their original arrangement only those parts were moveable which did not have a static function in the building. When the image is disassembled they are given an incomparably greater field of play for potential movement. This newly attained agility conversely affects those composite images constructed from these elements. What had originally only been a means for constructing such images now

[67] Similar things can only be found in isolated cases. One example are the (existing) towers of S. Agnese. These involve three levels with three genetically differing forms, related in such a way that the upper level seems to 'develop' incrementally from those below. An oval core form peels itself from the mantling. Gurlitt already admired this idea. Yet in this case, the basic form does not change any differently than with Borromini, but it is enclosed within the other forms and appears in increasingly clear manifestations.

became a method for investing old images with a new structure and new characteristics in order to turn this structure into the centre of the aesthetic experience. Borromini only gradually became aware of what could be potentially achieved in this way. 'Dura fatica a creder che si siano potute aver tante cose'.

35. A series of phenomena can be understood from this central idea of his art.

I. Not all architectural themes of his period, which also bound Borromini of course, provided the same possibilities for developing this idea. It is no coincidence that his oeuvre does not include any villas or palaces, that he rejected the commission for the Louvre, that the only basilical church (the restoration of S. Giovanni in Laterano) does not include any essential qualities of his art, and that one can see his great organizational architectural virtuosity visibly in the residences and abbeys, but not the depth of his art. Even in superficial terms, he treats these commissions differently – here is the 'sober', cold, calculating and a practical spirit. For him, these things belong to a sphere which is distinct from the 'pure', absolute architecture, as 'imaginative' as the other is 'rational'.

36. II. For Borromini, the units are relief units (like the bays and their equivalents). In this way, Borromini used an entire set of traditional forms: facades, walls ('Raumgrenzen'), altars and monuments; windows, doors and towers – spaces and architectural forms – are in principle all composed from similar basic forms, and this made it possible for instance to link a facade to a space by the use of a motif. For this reason it also followed that aesthetically, images in the round had only one side for Borromini, and that either the exterior or the interior were 'neglected', indifferent. Either they are plastic architectural forms with no relevant spatial core or else spaces with no exterior, spatial caves. At their core, the spaces are always simple: in Borromini there are no spatial penetrations in the manner of Guarini, and it is not possible for them to occur. An articulation of the spatial limits with elemental units can only have its effect in spaces composed of a single cell – it demands an easy assessability.

37. III. According to the thinking of Borromini, the relief units provide the ultimate parts and cannot be further divided into smaller units. This explains why such relief elements are so firm and internally coherent – which Hempel has so felicitously clarified in a comparison between a window by Borromini and a door by Bernini (Hempel, plate 11). The motif is the same. 'Instead of the forceful sculptural life of the frames by Borromini with one interlocking and enclosing the other, Bernini placed the parts lightly and loosely alongside one another'. One can still understand this fact – in Borromini, the individual elements are no longer intended to appear as independent segmental wholes since this would endanger the unity of the motif.

This also explains why a penetration of the wall surface is inadmissible in those instances where the principle has been completely applied. In spaces, this means that subsidiary spaces are completely separate. This process is particularly

obvious in the transition from the first design for S. Carlino to the equivalent image derived from relief units (fig. 32 and 33).

38. IV. The relief units used by Borromini are based entirely on the architectural orders. If these are removed, then the entire sophisticated structure and the character of 'movement' would be lost. For all of the phenomena we have been describing, the architectural orders provide a basic condition exactly as they had in the images where he found his elemental motifs. This accounts for the hitherto completely unexplained fact that such a 'revolutionary' as Borromini remained so bound to the 'ordini'.

3. The drawings of Borromini

39. From all of this, one can directly understand some of the characteristics of Borromini's drawings, and generally also the unique role that drawings play in his oeuvre.

I. In an 'objective' conception, two-dimensional images of three-dimensional objects, in this case drawings of architecture, can only provide what might also occur 'in reality'. What is being shown is a material thing partaking of the characteristics of the actual objects surrounding us in our daily lives. Drawings of such images always refer to such things conceived as real, however projectively they might present them. According to the peculiarly unobjective conception of Borromini there is a possibility of uncoupling the image to some degree from the object it originally refers to, and seeing it as an independent entity – hovering in the air as an independent 'potential' beyond the world of objects. This disjunction invests them with a peculiar life of their own. It is easier for the structure of the intended objects to shift more decisively. As drawings, they no longer have the characteristics of the actual rigid objects, but are complexes of geometric relations, lines, numbers and are only subject to the limitations of reality beyond such images which might be realized within the parameters of a given architectural commission.

This conception is related to what Frey has very correctly recognized, but not sufficiently explained: 'It is characteristic that Bernini, by contrast to Borromini, made most of his designs with perspective'; Borromini prefers orthogonal projections. A drawing made in perspective shows the actual spatial relations and with this clearly fixes the real 'object in space'; an orthogonal projection does not do this. A completely defined orthogonal elevation involves an entire series of possible objects which it might 'represent'. Orthogonal projection detaches itself more strongly from 'reality' than does a perspective image. In the designs by Bernini, the only changes occur in the form of individual detail; those of Borromini affect the core form itself.

40. II. Their large number is a fact which can be explained psychologically: as is typical with schizothymic artists (sections 53-58 below), Borromini's imagination is ceaselessly at work under an intrinsic compulsion and in a grotesque imbalance in relation to the tasks imposed from without. This should not be understood to

suggest that they conceal a part of his oeuvre. This only becomes apparent once it is recognized that Borromini thinks in terms of multiple imagery ('Gebilde-Mannigfaltigkeiten'). In the mind of Borromini, a small individual task such as a window in the Casa dei Filippini for instance (Hempel, fig. 44, 1), becomes a catalyst for an entire series of images, which do not present various 'good' resolutions to the problem, but relate rather in the manner of the three window variations in the Collegio di Propaganda Fide. Together they cause a complex image to unfold in a variety of metamorphoses.[68]

From the very outset, such a mode of thinking is condemned to act itself out in drawings, less because the ideas are too imaginative or technically unrealizable, but because it conceives in terms of 'multiplicities' (metamorphoses). In isolation it would be dead and rigid and loses half of its meaning; it is but the fragment of an idea which only appears complete in the course of the variations. Beside one sketch of a profile, Borromini has written 'per variare'.

III. Only when we approach the latent, refined geometrical structure of his works in a second iteration [the projected second volume of this study], will it become necessary to show the significance of the fact that in contrast to Michelangelo or Bernini, Borromini kept an inventory of (numbered) his drawings.[69]

4. The imaginary architectural world of Borromini and the real world

41. Such a 'thinking in multiplicities' is necessarily abstract and removed from reality.

How do the architectural works of Borromini relate to the actual world in which they were 'realized'?

As we have described them and they can now be clearly understood, one must distinguish between the two groups by their differences of appearance and the way in which they were developed – those buildings of the type of the Casa dei Filippini which might be summarized somewhat superficially as 'functional designs' and then those which alone are 'works of art' in the strict sense. (Not all architecture is art – *Bau-Kunst*).[70] For the moment, we are only speaking of the latter group. One can say of these that:

[68] The famous 'questo' which Borromini wrote in the margins of his drawings does not always signify that this particular design is necessarily preferable to others, but often presents the most apt choice from among a sequence of examples of equal value for a particular architectural commission.

[69] cf. provisionally, Hans Sedlmayr, 'Zum gestaltenden Sehen', *Belvedere Kunst und künstlerische Kultur der Vergangenheit Zeitschrift für Sammler und Kunstfreunde*, 9-10, 3, 45, March 1926, 57-62.

[70] I can refer here to the decisive distinction made by Ludwig Coellen, *Der Stil in der bildenden Kunst Allgemeine Stiltheorie und geschichtliche Studien dazu*, Traisa Darmstadt: Arkadienverlag, 1920, 110.

First of all: the space in which Borromini conceives them before his 'intellectual eye' is not developed from actual open space – it does not 'intend' to represent actual open space. It is not a heroized or 'transfigured' objective space like that in which the objects of the world are assembled. It is rather an imaginary space with qualities similar to that in which we 'see' the multiplicity of geometrical images – a space with a quasi-mathematical structure. These images are at home in this 'abstract' space containing nothing else and referring back to them.

There is no shifting in this space between light and shadow: for Borromini its buildings appear in an even, diffuse, schematic light. Those buildings actually constructed in the real open space required lighting as close to this as possible. An illumination 'adequate' to them is not the bright sunlight with shadows; they prefer a grey light as diffuse as possible, the same illumination which Borromini also sought for the interior of his buildings. S. Carlino and S. Ivo are both classical examples and proof of this.

To arrange the works of Borromini specifically and meaningfully, it is necessary to clearly recognize the elements of order. Light and shadow would dissect and blur their structure ('Gestalt'). If the effects of light and shadow were intended on the facade of S. Carlo but not on the interior, then the relationship between the interior and the facade would be paralyzed. It was an attention to the striking effects of light and shadow (a result of their visual schooling in the period of impressionism) which led the earlier critics – such as Gurlitt – to misrepresent its actual significant structure. 'Proper' illumination for Borrominesque images becomes apparent to the viewer in the interior of S. Carlino. After being introduced to Borromini as a composer of light and shade and prepared by photographs emphasizing this, they are very surprised here by the ghostly, 'unspirited' pallidness of the light and lack of contrasts. Borromini has placed the famous profiles which are taken to have been conceived for an 'optic' effect in spots where they are never hot by direct sunlight and must literally be perceived as 'haptic'. Thus, the famous door in the Casa dei Filippini with its forceful deeply protruding pear-shaped profile (Hempel, plate 40, 1) stands in an almost completely dark spot – and which was always that way. In his drawings, Borromini never indicates effects of light or shadow, but always only pure form. Only occasionally can a cursory glance mistake his unique technique of draftsmanship for a suggestion of chiaroscuro. (In Bernini, light and shadow are also mere accidental qualities and not essential to the artistic forms, but have a positive function as such; for him the structure stands in a quasi real objective space transfigured by emotion).

42. Second: the substance in which Borromini conceived these structures was not a certain actual material.

In the ancient models for the works of Borromini, the 'Borrominesque curves' are built of stone and conceived as carved in stone; as is also true of Michelangelo. Borromini has given up the stone character of the architecture – not in favour of another material, but in favour of a complete indeterminacy of material. Its movement is in no sense a 'victory over the stone'. It appears as if those late-

Hellenistic forms are reflected in a fluid medium conforming to a given set of rules and moved by a force at the slightest of efforts, transforming and moving anything rigid – and for this reason there is no pathos as in late antiquity or Bernini.[71]

The material in which the forms are conceived is nothing which has 'grown' or is 'living' as in Greek art and all others influenced by it, has nothing to do with a gift of intrinsic formal forces or animation, as with Michelangelo, but rather a dead amorphous mass which lends itself to anything. At one spot in the *Opus Architectonicum*, Borromini characteristically says that he wishes it were possible to cast the entire facade (of the Oratorio dei Filippini) as one single brick with no seams. He makes architectural models in wax and clay. His works are often composed as if from homogeneous large pieces.

As one can already see from their sharp profiles, these forms are not conceived in this material either, but only chosen because it usually accommodates the general malleability of forms, completely independently of the particular material in which they are ultimately made. His profiles are known to have been executed in brick, stucco, travertine, wood, mortar, marble and metal. These observations can also be expressed as follows: such thinking completely ignores the manifold of materials as something fundamentally equal and even conceived as homogeneous. Forms are applied to the material according to unwavering universal rules. There is no such thing as an internal formal force – the material is inanimate and without spirit.

This observation is also not in accord with the previous conception which saw Borromini as the adherent of an 'organistic' world view, and attributes to him an intuition (into the things of life). Here, it is the unbelievable living quality of the buildings which gives the illusion of a vivacity which is not present. This is something typical of the most apparently 'crystalline' buildings of antiquity – such as a Doric temple - or the works of Michelangelo.

It is only in the sense of 'higher' geometry such as complicated rotating bodies in relation to the more elementary forms that the images of Borromini give an illusion of 'being alive'. Such a mistaken impression can come about since his forms are often based on those from antiquity, and the erstwhile life from these still penetrates the abstract geometrical forms. Their 'movement' is in no way similar to the potential for motion in organic life, but rather the flexibility of abstract formal complexes. Yet there is something like an 'organic life' which occasionally bleeds through these abstract geometrical forms.

In their completed state, most of his works are disappointing, and no misguided enthusiasm for all manifestations of the Baroque should delude us in this. In a precise reversal of ancient art, his works make a better impression in photographs than they do in reality. Its material often makes a blunt, dead and dusty impression. Unlike ancient art, its decay reduces its appeal. 'The stucco has

[71] This does not obliterate the sharpness of detail. For this reason, it is better to characterize this as we do than to speak of 'architectural elements of dough,' which Frey has also been very correct in contesting.

chipped off of the columns, the ogees seem to have darkened and the walls to have become dappled'. This cannot be understood to mean that he was indifferent to the materials. He was highly interested in technical problems; one should consider the virtuosity in his technique of using brick in the Casa del Filippini, which he had carefully studied from ancient models. It is a result of his conception of the materials as a dead and amorphous mass.

One can see that this characteristic is also organically related to what we have been recognizing earlier. This in fact is nothing other than the 'removal from reality' of this world of forms, but seen from the other side as it were. They can also only be atomized as dead forms.

43. Third: Borromini imagined these images to be emancipated from the relations of the real world. For Borromini as an artist, 'churches', 'facades', 'windows' or 'doors' did not exist primarily, but instead only pure forms and pure motifs, absolute and 'uncoupled'. A 'church', a 'facade', a 'window' or a 'door' is an occasion to realize these absolute forms – only a limit, not a 'determination'.

An analogy from elementary psychology might clarify these sentences: When subjects of an experiment are shown geometrical figures, Friedrich Wulff has found there to be two types of conception.[72] There is one who see these as conglomerations of lines such as a figure  as a 'zig-zag' and so forth, while the other conceives them as objects, 'objective structures' such as the same figure as a set of steps. The one group leave what they see in its own sphere while the other inserts it into the relations of the world. This changes the expressive character of the things, and in a certain sense also the way in which they are evaluated ('ihre Bewertung'). Something appearing 'correct' as a 'zig-zag' might seem 'incorrect', 'incomplete' or 'bizarre' as a set of steps.

What we see here is something similar. Those who would attach the images of Borromini, such as the windows of the Propaganda Fide-facade for instance, to that class of names valid for 'quotidian' architecture and see them as 'windows' will find them to be 'bizarre' in that sense, and a random aberration from the typical forms. Within this conception, which points to a persistence of the 'classical' approach, architecture in general and its individual forms conform to the world of actual 'objects'. For this reason, the images have 'natural' limits which they cannot overcome. A 'gate' might appear in a large number of ways for instance, but must always maintain a certain 'character as a gate' – even when it is escalated beyond the quotidian context to the 'ultimate form' or 'idea' of a gate. Fundamentally, each motif has a close relationship to its 'worldly' function.

For Borromini by contrast, the images he conceives do not have their place in the real world, but in a semi-real sphere of pure forms. Their changeability is theoretically not limited, or only in a 'secondary' sense in that they be realizable as a

[72] Friedrich Wulff, 'Beiträge zur Psychologie der Gestalt', *Psychologische Forschung*, 1, 1922, 333-373, esp. 349.

'window', a 'facade' etc. For this reason, the autonomous life of the motifs is extraordinarily strong.

The origin of these images in another world is not obvious. They appear as something like exotic plants transposed into a different, more 'real' and cruder vegetation, on the basis of which their unique character will remain incomprehensible – or something like deep-sea animals washed ashore into a part of our 'normal', everyday world.

44. Fourth: Borromini does not conceive of his images in a certain situation or certain surroundings. They descend into it without having anything intrinsic to do with it. There is a negation of the connection to the surrounding buildings. It has no positive effect on their form, more of a distorting effect at best. It would be an almost grotesque idea to place an architecture by Borromini into a landscape. This reveals that he never imagined them in a landscape – like the designs by Fischer von Erlach for instance – or even between other concrete objects of the world. He imagines them as standing in an abstract sphere of pure forms.

This is also immediately obvious. They are only vaguely, or else not at all related to their surroundings. It looks as if they had randomly 'fallen' from the sky into a certain spot. Borromini repeatedly stressed this character of isolation. They appear as fragments from a strange other world, of which one is only holding a haphazard piece and can only guess its nature from such isolated parts, but never view its entire range.

These images direct the viewer beyond themselves into that 'world' in which they are at home and the only place where they could be understood. This exists only in the mind of Borromini, but was partially realized in his many drawings.

5. Physiognomy of the images

45. The characteristic qualities of Borromini's formal system become apparent in the outward appearance of the images – in their physiognomy – that part which is perceived first and most graphically in approaching them. (This is similar to the way in which one has a sense of immediately recognizing a quality of 'pedantry' in an individual – a certain functional behaviour in given situations).[73]

At all levels, there are two large harshly antithetical groups of related qualities: the 'abstract', 'rational', 'quasi-mathematical' and 'scientific' thought distinguished itself particularly as a sort of 'austerity', 'coldness', 'crystalline hardness'; this is what is meant when we refer to profiles 'as sharp as a knife'. In these images, one can directly recognize their 'secret geometry' and character as abstract 'reason'. By contrast, the character of plastic and corporeal values appears as the extrinsic phenomenon of a peculiar sort of 'vividness', as 'organic growth',

[73] I cannot pursue this question here and refer to the study by Heinz Werner, 'Über die Sprachphysiognomik als einer neuen Methode der vergleichenden Sprachbetrachtung', *Zeitschrift für Psychologie*, 1928, 2, 337-363, which is unusually rich in innovative perspectives.

'malleability', (organic) 'movement'; this has been characterized in words taken from the organic realm: forms 'mushroom', entablature bends 'like serpents', or a facade 'stretches'.

One should remain aware that these far too general designations – which seem to lead to the opposition from Wilhelm Worringer between 'abstraction' and 'intuition' – serve to circumscribe phenomena which are far more concrete and can be perceived visually.

In the outward appearance of the works, these two spheres interpenetrate and join in very different ways without ever actually melding into one another. The tension is not resolved in intermediate values, but is at times completely concealed and at others completely overt. Between the 'cool' effect of the mathematical and the 'warmth' of the organic, Borromini does not arrive at a mild middling temperature, but instead at the paradoxical 'cold fire', that 'dead life' which generally encloses the peculiar appeal of Borromini's architecture, and depending on the disposition of the viewer either seems fascinating or repelling. In discovering 'naturalistic' blossoms amid the most abstract and coldest forms one can experience this antithesis in the extreme.

This phenomenon of an internal split within the art of Borromini cannot only be explained psychologically, but demands such an explanation (sections 53-58 below). Yet this can only explain a part of this phenomenon, its 'a-historical' or 'timeless' component. This way alone cannot explain the concrete appearance of these images, but these must instead be understood historically in terms of the combination and tension between these particular 'organicist' and 'mechanistic' systems of ideas and types of forms.

46. The external appearance of his early works is distinct from the later work in a remarkable series of points. In the early period, the expressiveness of the imagery is clear, unambiguous and strident – one is tempted to say 'more scientific': the abbey of S. Carlino (without the later church facade), the convent and the Oratorio dei Filippini, the Palazzo Falconieri. These works extending approximately into the mid-1650's recall in some sense the 'humble' style of Vignola. Even their movement – which is also not absent from some of Vignola's designs – is 'subdued', 'objective', 'cold' – one should recall the façade of the Oratorio dei Filippini in relation to the late façade of S. Carlino.[74] This is related to the fact that in this period Borromini had frequent recourse to the 'arid naturalism' (Wickhoff) of the Augustan period, as one can see especially in the ceilings of the Palazzo Falconieri, not merely in the motifs, but also in treatment of detail. His occasional reference back to the early Renaissance is also a sign of this (sacristy of S. Carlino).

Such works also recur in the later period (San Giovanni in Oleo). Beside this there were however others with a completely different expressiveness in spite of an identical structure.

[74] In Vignola, one might compare for example the strongly 'Borrominesque' fountain reproduced in Willich, Vignola, fig. 38.

Oskar Pollak has described the change in the form of small details and particularly the profiles in which this shift occurred. What is more important is the completely altered visible 'character'. Morphologically identical images acquire a completely different character and are changed in this way so as to barely be recognizable. While the expressiveness of the image had earlier gone parallel to its structure or been a more random component, this changed so that it became the positively central consideration. The entire image, even down to the entablatures, was invested with an emphatic quality. This is elevated to the level of an expressive character which had been completely absent form his early work, which had been somewhat 'odd' at best, so as to now seem 'enigmatic'. Images such as the top of the tower of S. Andrea delle Fratte arouse the dreamy question 'where have I seen that before? What does that mean?' – often with typically 'irritating' contiguous feelings. This is related to the intrusion of strange, 'visionary' anthropomorphic forms, constantly re-emerging like fixed ideas – the angelic herms. Banal forms, well known from other contexts, such as the 'mountain' symbols of Pope Alexander VII acquire a 'disquieting' or 'fantastic' character. There is an increase of disparate or 'mismatched' motifs. The crassest examples of this are the tombs, fig. 58 and Frey fig. 71.

This shift in the 'expressive character' of the images can also be understood in psychological terms, and probably only in that way, as a shift in the psychological constitution of Borromini. (sections 53-58 below). Such tendencies cannot be shown to have been historical trends of the time, nor does it stem from within the artistic systems which touched Borromini and converged in his work. Seen from the point of view of Borromini's architecture, they are completely 'irrational' and without historical consequences.

CHAPTER 4
BORROMINI AND GUARINI

1. Prefatory theoretical remarks

XVIII. In this section, Borromini's conception of architectonic problems and his architectonic formal mode will be compared with that of Guarini. In and of itself, this would be the goal of an autonomous discipline, the study of art ('Kunstwissenschaft') or 'comparative study of art', which organizes all known formal modes into a 'natural' system according to types with fluid transitions. This has a very different function within a monographic essay. For one there is a sort of test as to whether the central ideas have been successful or gone deep enough. If it had for instance been common in the 17th and 18th century to compose such things from relief-like units, then it would have little significance for a theory of the art of Borromini. It would be necessary to seek what is original to Borromini in other layers of the work. Since such a conception has never yet been discovered outside of the oeuvre of Borromini, it assumes the central place in any essay at such a theory.

Such comparisons are a preliminary necessity in assessing the place of Borromini within the historical process. This is based on a determination of the genetic relations between the formal system of Borromini and those formal modes which went before and after him. These genetic relationships are discovered in practice by similarities and dissimilarities – as we have shown this surrounding the origin of individual forms.

XIX. Similarities between artistic formal systems cannot be studied by randomly comparing individual images – which one considers to be apt. The obvious thing, and what is very frequently done, is to confront thematically related imagery within each oeuvre and then believing to establish the individual conceptions from the comparison of individual characteristics. Such a procedure can lead to completely mistaken results, such as when the similar images assume very different roles and significance within the system, if the one is extremely central and characteristic and the other relatively peripheral or random. To better understand the dubious nature of such a procedure one should imagine an attempt to characterize the intellectual manner of two separate individuals.

For this to be successful, the two images must be known to be equivalent, meaning that they fulfil the same function within the respective whole – in this case within the individual oeuvre being studied.[75] In the case of Borromini and Guarini the situation is particularly favourable since their artistic 'systems' are in many ways constructed similarly, and thematically similar images also provide an actual equivalent.

For the same reason one cannot establish genetic relations between conceptions because the individual character of the oeuvre is similar. For the system of Borromini in its genetic derivation it would be completely insignificant to find extrinsically similar individual forms in the work of other earlier architects. The insufficiency of such a comparison has been far more readily acknowledged than the pointlessness of making a comparison without first establishing the equivalent status of the objects being compared.

XX. It only becomes possible to establish such an equivalence once the whole has been understood in which the individual example participates as a segment. Various architectural conceptions can for example only then be compared once they have been understood, and it is only as a result of this that one can recognize the equivalence of resulting imagery. Until that point, all comparisons remain superficial. They extract individual parts or characteristics from the context of the whole, which only gain their meaning from their place within that whole, and this then necessarily leads to mistaken conclusions about identity and dissimilarity (as well as regarding genetic relations and the historical process).

To compare the conception of Borromini with that of another, it will be necessary to study the other in the same depth as we have attempted with Borromini himself. This assumes that detailed studies have been made of the

[75] On this, cf. Kurt Lewin, *Der Begriff der Genese*, Berlin: Springer, 1922, (as in note 34), 4.

individual buildings. Such a project faces less difficulty when the works are only being judged by a scheme of characteristics which has been pre-arranged, but it becomes great when each individual image is to be thoroughly comprehended in terms of its entire construction. Up to this point, only very few such structural analyses have been made, and this is not something to be done in haste. This is the main reason that we are often limited to quite vague hypotheses in the statements to be made presently about the development.

In our case, it is only possible to see the development somewhat more clearly for the short stretch of time between Borromini and Guarini. For Guarini, the good descriptions of individual works made by Brinckmann penetrate to the centre of the phenomena and make it possible to more readily arrive at a theory for Guarini. The excellent structural analysis made in the 1920's of two main works of Michelangelo by Annie Popp and Erwin Panofsky casts a strong light on this historical moment. I myself have ascertained certain things about the German Baroque following 1690. Between these fixed points, it is still necessary to bridge the gaps with some bold constructions. (see chapter 7).

What one would like most immediately would be theories for the guiding masters of the 16th and 17th centuries based on structural descriptions, and pertinent to Borromini and the ancient 'Baroque'.

The following pages are intended to merely provide a selection of conclusions from our essay, essential for our goal, and to define the architecture of Guarini in this manner.

2. Borromini and Guarini

47. What is most striking in Borromini is that the constitutive unity of his spatial and fully sculptural imagery is the same as that of his designs within the surface. In his spatial imagery, the space is never more than the core, and achieves its actual structure by the flat units ('bays') comprising the walls. We have seen that if this 'relief' of the spatial border is removed, then the structure of its spatial configuration will be fundamentally altered. At their core, his spaces are never complicated, it is only their outer border which are complicated.

With Guarini we are confronted with images of a completely different architectural structure.[76] When they are viewed in terms of characteristics typical of the 'High Baroque style', they do not differ at all from those of Borromini. In this regard, they form a natural group together with the imagery of Borromini and relate to them particularly closely.

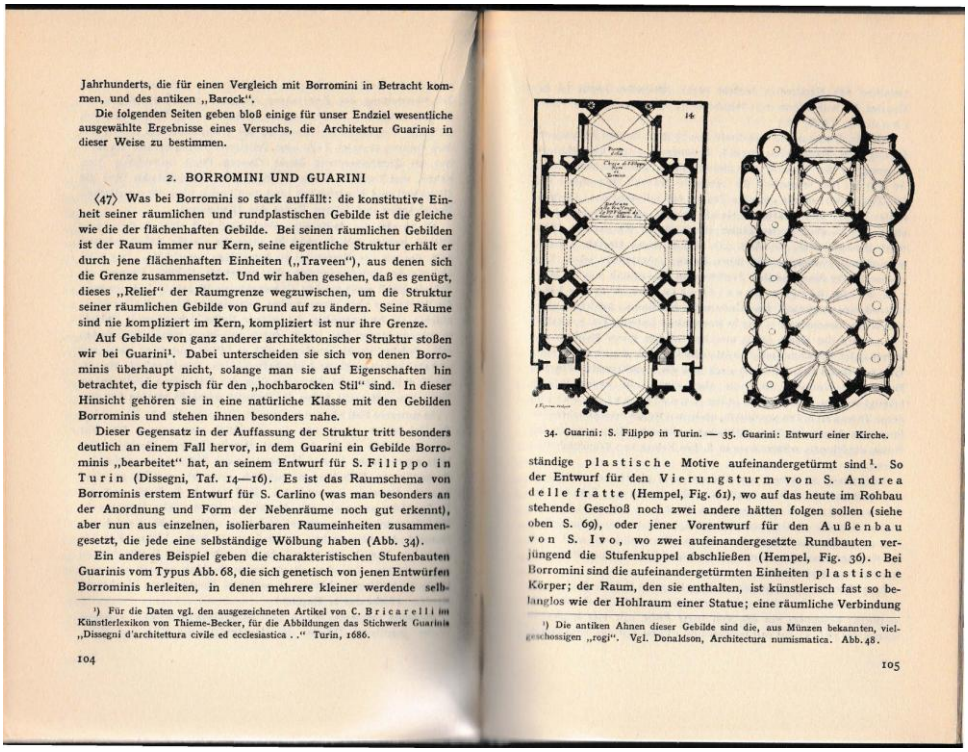
This difference in the conceptual structure is especially clear in one example where Guarini 'elaborated upon' a model by Borromini, in his design for the church

[76] For the relevant data, one should consult the excellent article by Carlo Bricarelli in, Thieme and Becker eds. *Allgemeines Lexikon der bildenden Künstler*, 15, Leipzig: Seemann, 1922, pp. 174-176, and illustrations available among the engravings published by Guarino Guarini, *Dissegni d'architettura civile ed ecclesiastic*a, Turin: Gianelli 1686.

of S. Filippo in Turin (*Dissegni*, plates 14-16). This involves the spatial scheme from the first Borromini design for S. Carlino (particularly apparent in the arrangement and form of the ancillary spaces), but composed of individual and separable spatial units, each of them with individual vaulting (fig. 34).

Another example can be seen in the typical stepped architecture by Guarini as in fig. 68, genetically derived from the designs of Borromini in which numerous incrementally smaller independent sculptural motifs are piled above one another.[77] This is also true of the crossing tower of S. Andrea delle Fratte (Hempel, fig. 61), where two more levels would have been added to the present shell of the building (above in section 25) – as well as of the exterior of S. Ivo where two diminishing centralized constructions provided the top of the stepped dome (Hempel, fig. 36). In Borromini, the towering stacked units are plastic forms, while the space they contain is nearly as irrelevant as the hollow interior of a statue; there is no spatial connection between the levels. With Guarini, one finds the same type in the telescope-like narrowing exterior form of the tower spaces (fig. 68).

48. In this new artistic system based on the construction of spatial cells, the individual forms which Guarini takes over from Borromini have a completely



Jahrhunderts, die für einen Vergleich mit Borromini in Betracht kommen, und des antiken „Barock".

Die folgenden Seiten geben bloß einige für unser Endziel wesentliche ausgewählte Ergebnisse eines Versuchs, die Architektur Guarinis in dieser Weise zu bestimmen.

2. BORROMINI UND GUARINI

⟨47⟩ Was bei Borromini so stark auffällt: die konstitutive Einheit seiner räumlichen und rundplastischen Gebilde ist die gleiche wie die der flächenhaften Gebilde. Bei seinen räumlichen Gebilden ist der Raum immer nur Kern, seine eigentliche Struktur erhält er durch jene flächenhaften Einheiten („Traveen"), aus denen sich die Grenze zusammensetzt. Und wir haben gesehen, daß es genügt, dieses „Relief" der Raumgrenze wegzuwischen, um die Struktur seiner räumlichen Gebilde von Grund auf zu ändern. Seine Räume sind nie kompliziert im Kern, kompliziert ist nur ihre Grenze.

Auf Gebilde von ganz anderer architektonischer Struktur stoßen wir bei Guarini[1]. Dabei unterscheiden sie sich von denen Borrominis überhaupt nicht, solange man sie auf Eigenschaften hin betrachtet, die typisch für den „hochbarocken Stil" sind. In dieser Hinsicht gehören sie in eine natürliche Klasse mit den Gebilden Borrominis und stehen ihnen besonders nahe.

Dieser Gegensatz in der Auffassung der Struktur tritt besonders deutlich an einem Fall hervor, in dem Guarini ein Gebilde Borrominis „bearbeitet" hat, an seinem Entwurf für S. Filippo in Turin (Dissegni, Taf. 14—16). Es ist das Raumschema von Borrominis erstem Entwurf für S. Carlino (was man besonders an der Anordnung und Form der Nebenräume noch gut erkennt), aber nun aus einzelnen, isolierbaren Raumeinheiten zusammengesetzt, die jede eine selbständige Wölbung haben (Abb. 34).

Ein anderes Beispiel geben die charakteristischen Stufenbauten Guarinis vom Typus Abb. 68, die sich genetisch von jenen Entwürfen Borrominis herleiten, in denen mehrere kleiner werdende selb-

[1]) Für die Daten vgl. den ausgezeichneten Artikel von C. Bricarelli im Künstlerlexikon von Thieme-Becker, für die Abbildungen das Stichwerk Guarinis „Dissegni d'architettura civile ed ecclesiastica . ." Turin, 1686.

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34. Guarini: S. Filippo in Turin. — 35. Guarini: Entwurf einer Kirche.

ständige plastische Motive aufeinandergetürmt sind[1]. So der Entwurf für den Vierungsturm von S. Andrea delle fratte (Hempel, Fig. 61), wo auf das heute im Rohbau stehende Geschoß noch zwei andere hätten folgen sollen (siehe oben S. 69), oder jener Vorentwurf für den Außenbau von S. Ivo, wo zwei aufeinandergesetzte Rundbauten verjüngend die Stufenkuppel abschließen (Hempel, Fig. 36). Bei Borromini sind die aufeinandergetürmten Einheiten plastische Körper; der Raum, den sie enthalten, ist künstlerisch fast so belanglos wie der Hohlraum einer Statue; eine räumliche Verbindung

[1]) Die antiken Ahnen dieser Gebilde sind die, aus Münzen bekannten, vielgeschossigen „rogi". Vgl. Donaldson, Architectura numismatica. Abb. 48.

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34. Guarini: S. Filippo in Turin. – 35. Guarini: Design for a church.

[77] The ancient predecessors of this were the 'rogi' built in many levels and known from coins, cf. Donaldson, op. cit., as in note 60, fig. 48.

different meaning. He made repeated use of the 'wavy bay' from Borromini. In Borromini, the wavy bay constitutes an independent motif within the surface. As a facade for Guarini, it provides the exterior form of a combination of three spatial cells lying behind it (the design, *Dissegni*, plate 30, fig. 35) – which generate its form and in some sense 'motivate' it from the interior. Its meaning and function is the same in the interior of S. Maria della divina providencia, where it appears on the walls of the nave. Here, the undulation of the space does not emanate from its border, as is the case for Borromini at S. Carlino, but instead the space itself undulates as a result of its structural composition from melded oval cells which create the wall. Of course the undulating walls of Borromini provided the source for this also, but they are generated according to a different principle. In the Capella del Sudario, where the theme is a continuation of S. Ivo, the convex sections bulging into the space are parts of actual fully round bodies penetrating the space, while at S. Ivo they are fields from the sections of the wall.

It is interesting to observe how Guarini conceives of purely sculptural (spaceless) architectural images. One sees the concave forms of the altar for S. Vincenzo in Verona (*Dissegni*, plate 22) as a flurry of blasting parts from spatial shells. This is the exact opposite of Borromini, who composed even the border of the space primarily from sculptural and architectural units.

49. Following the ground plan, Guarini composed his buildings from elements taken primarily from antiquity; this is particularly true of the form with four concave sides which harmonize so well with round and oval forms, as we have already seen it in Borromini. (See section 25). It is not necessary here to discuss the non-antique element of the principle of the domes in Guarini. (fig. 70).

These elements are joined by various types of intersections among spatial cells. We shall list them here with no pretence to being systematic.

The type of merging space. Example: S. Filippo in Turin. The octagonal cells abut one another smoothly along their large sides. At the foot and head of each spatial group, there is a smaller, less complete cell constructed in the same way (as can be seen in the designing and the cupola), also smoothly attached. If one omits the construction of the vaulting, which is itself also not terribly intricate, then the structure of this spatial configuration is quite simple – the simplest example of a multi-cellular image. In a certain sense it recalls some Byzantine systems and their derivatives (in Islam).[78] Cf. *Dissegni*, plates 14-16.

The type of spatial penetration. Example: Design for St. Mary of Altötting in Prague. Three large spatial cells each with independent vaulting and its own lantern. Initially, one is tempted to conceive of the central one as a lateral octagon with incomplete lateral ovals attached. In examining the vaulting however, it becomes apparent that the large cell with octagonal plan has exactly the same vaulting as the smaller ovals (aside from the fact that the narrow cross flanges have

[78] This allows us to understand that the presence of Mauresque dome-constructions in Guarini cannot be explained exclusively by his incidental visits to Sicily and Spain.

been replaced by double cross-ribs). In addition to this, the equality of all three cells is emphasized by the identical form of the windows in all three cells. Of two sequential spaces, both of them are incomplete. Each of the spatial cells eliminates parts of the other; if one imagines them supplemented, then they would interpenetrate one another. The nature of the example itself forces us to conceive of them in that way.

Other examples of the same interlocking type are the 'interpenetration' of the small lateral oval chapels with the large oval cells in the same building, while the altar screens bring the plan to form a complete oval so that we imagine their space as penetrating into the large cell. Also San Filippo Neri in Casale (*Dissegni*, plate 25).

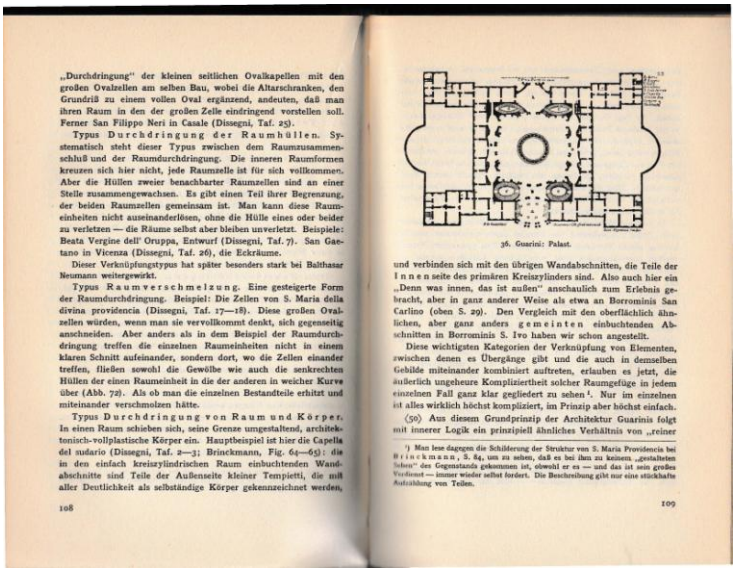
The type of penetration of the spatial cells. In terms of its system, this type stands intermediary between the merging space and the interpenetration of space. In this, the internal spatial forms do not cross and each spatial cell is complete in itself. Yet the shells of two adjacent spatial cells have grown together at one spot. There is a part of its border which is common to both. It would be impossible to separate these two spatial units without diminishing the shell of either one or the other, while the spaces themselves would remain unaffected. Examples: Beata Vergine dell'Oruppa, design (*Dissegni*, plate 7). San Gaetano in Vicenza (*Dissegni*, plate 26), the corner spaces.

The type of spatial amalgamation. An elevated form of spatial interpenetration. Example: the cells of S. Maria dell divina providencia (*Dissegni*, plates 17-18). If one imagines them as complete, then these large oval cells would cut into one another. Unlike the type of spatial interpenetration however, the individual spatial units do not collide in a clear section, but at those spots where the spatial cells meet the vaulting as well as the vertical shells of the one spatial unit flow into the other in the form of a soft curve (fig. 72). It is as if the individual parts had been heated and melded together.

The type of interpenetration of space and form. Fully round architectonic sculptural bodies insert themselves and cause a formal change in the border. The main example for this is the Capella del Sudario (*Dissegni*, plates 2-3; Brinckmann, fig. 64-65) the indented wall segments of the simple circular-cylindrical space are parts of the exterior of small temples which are very clearly designated as independent forms, and are linked to the other wall segments forming part of the interior of the primary circular cylinder. Here again, the viewer is made to experience 'all that is within is also without', but this is done very differently than Borromini at S. Carlino (analyzed above Part 1 Chapter 2). We have already made the comparison to the indented segments designed by Borromini at S. Ivo, which are superficially similar but intended very differently.

Although elements of each can be combined with transitions, and with one another in the same example, with these most important categories in mind it

becomes possible to identify each individual case perfectly clearly.[79] Only in the individual details are these things actually complicated. Their principles are quite simple.



„Durchdringung" der kleinen seitlichen Ovalkapellen mit den großen Ovalzellen am selben Bau, wobei die Altarschranken, den Grundriß zu einem vollen Oval ergänzend, andeuten, daß man ihren Raum in den der großen Zelle eindringend vorstellen soll. Ferner San Filippo Neri in Casale (Dissegni, Taf. 25).

Typus Durchdringung der Raumhüllen. Systematisch steht dieser Typus zwischen dem Raumzusammenschluß und der Raumdurchdringung. Die inneren Raumformen kreuzen sich hier nicht, jede Raumzelle ist für sich vollkommen. Aber die Hüllen zweier benachbarter Raumzellen sind an einer Stelle zusammengewachsen. Es gibt einen Teil ihrer Begrenzung, der beiden Raumzellen gemeinsam ist. Man kann diese Raumeinheiten nicht auseinanderlösen, ohne die Hülle eines oder beider zu verletzen — die Räume selbst aber bleiben unverletzt. Beispiele: Beata Vergine dell' Oruppa, Entwurf (Dissegni, Taf. 7). San Gaetano in Vicenza (Dissegni, Taf. 26), die Eckräume.

Dieser Verknüpfungstypus hat später besonders stark bei Balthasar Neumann weitergewirkt.

Typus Raumverschmelzung. Eine gesteigerte Form der Raumdurchdringung. Beispiel: Die Zellen von S. Maria della divina providencia (Dissegni, Taf. 17—18). Diese großen Ovalzellen würden, wenn man sie vervollkommt denkt, sich gegenseitig anschneiden. Aber anders als in dem Beispiel der Raumdurchdringung treffen die einzelnen Raumeinheiten nicht in einem klaren Schnitt aufeinander, sondern dort, wo die Zellen einander treffen, fließen sowohl die Gewölbe wie auch die senkrechten Hüllen der einen Raumeinheit in die der anderen in weicher Kurve über (Abb. 72). Als ob man die einzelnen Bestandteile erhitzt und miteinander verschmolzen hätte.

Typus Durchdringung von Raum und Körper. In einen Raum schieben sich, seine Grenze umgestaltend, architektonisch-vollplastische Körper ein. Hauptbeispiel ist hier die Capella del sudario (Dissegni, Taf. 2—3; Brinckmann, Fig. 64—65): die in den einfach kreiszylindrischen Raum einbuchtenden Wandabschnitte sind Teile der Außenseite kleiner Tempietti, die mit aller Deutlichkeit als selbständige Körper gekennzeichnet werden,

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36. Guarini: Palast.

und verbinden sich mit den übrigen Wandabschnitten, die Teile der Innenseite des primären Kreiszylinders sind. Also auch hier ein „Denn was innen, das ist außen" anschaulich zum Erlebnis gebracht, aber in ganz anderer Weise als etwa an Borrominis San Carlino (oben S. 29). Den Vergleich mit den oberflächlich ähnlichen, aber ganz anders gemeinten einbuchtenden Abschnitten in Borrominis S. Ivo haben wir schon angestellt.

Diese wichtigsten Kategorien der Verknüpfung von Elementen, zwischen denen es Übergänge gibt und die auch in demselben Gebilde miteinander kombiniert auftreten, erlauben es jetzt, die äußerlich ungeheure Kompliziertheit solcher Raumgefüge in jedem einzelnen Fall ganz klar gegliedert zu sehen[1]. Nur ist alles wirklich höchst kompliziert, im Prinzip aber höchst einfach.

(50) Aus diesem Grundprinzip der Architektur Guarinis folgt mit innerer Logik ein prinzipiell ähnliches Verhältnis von „reiner

[1] Man lese dagegen die Schilderung der Struktur von S. Maria Providencia bei Brinckmann, S. 84, um zu sehen, daß es bei ihm zu keinem „gestalteten Sehen" des Gegenstands gekommen ist, obwohl er es — und das ist sein großes Verdienst — immer wieder selbst fordert. Die Beschreibung gibt nur eine stückhafte Aufzählung von Teilen.

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36. Guarini: Palace.

50. By an internal logic, there is a relationship of 'pure architecture' and 'functional building' theoretically similar to Borromini which follows from this fundamental architectural principle of Guarini. It is not applicable to architectural blocks constructed from simple rectangular unvaulted spatial cells. Among such examples, it can only be developed by implication in a few favoured spots. In his design for a palace, *Dissegni*, plates 23-24, Guarini thus introduces spatial interpenetration in the entrance and generates typically Borrominesque curves in the walls of the court from the variously shaped sequences of spaces behind them (fig. 36). He did the same thing at the Palazzo Carignano. Within his oeuvre, these works are comparatively peripheral and only allow a vague sense of its central principle. The villa shown in *Dissegni*, plate 31 is not a work completely in the character of Guarini; only its details recall Guarini, but not its constitutive principle.

There is another way in which this relationship of 'secular' and 'free' architecture in Guarini is completely different from the resolution of the problem by Borromini. The Guarini principle might be said to have various degrees of application at its disposal. For this reason it is possible to incrementally descend from the most refined central spots, with the fundamental principle at its zenith, to simpler junctures and all the way to the barest string of rectangular spatial cells. The latter appear here as the utmost in marginal possibilities, comparable to the

[79] By contrast, one can read the description which Brinckmann, p. 84, offers of the structure of S. Marie Providencia and see that he did not arrive at a 'view in terms of gestalt' of this image – in spite of the fact that he, much to his credit, repeatedly called for this himself. His description only yields a fragmentary listing of parts.

unadorned walls in Borromini – borderline examples of the curved relief surface. Contrary to Borromini, here there is no unbridgeable gap between the most highly characteristic applied Guarinesque parts and the rest of such an example.

The Guarini principle of spatial cells reveals itself to be more pliable than the relief unit principle of Borromini in uniformly dealing with all of the existing tasks of architecture. Yet this is only true in those cases where it is not presented with external obstacles. It would fail in situations where the actual success would consist in mastering a complicated architectural situation; very tellingly, Guarini never accepted such a commission – as those where Borromini exhibited organizational brilliance.

51. In contradistinction to Borromini, there is no difficulty in historically deriving not merely the forms, but also the fundamental principle of Guarini. It is the basic principle from a group of Roman-Hellenistic buildings which are preserved for us primarily within the Villa Hadriana. It appears that Guarini was led to these by his verifiable study of the work of Borromini. In San Gaetano in Vicenza for instance, the motif of the building as well as its overall principle have been clearly derived from the domed hall of the small palace at the Villa Hadriana, as can be recognized in fig 37-38 without further ado. A remaining space with a unique four-horned plan is formed by the convergence of four round (oval) spaces and given a cupola of its own and is interpreted as the spatial remainder of a circular space penetrated by an oval.[80]

A number of less important and more casual adoptions of Hellenistic-Roman forms and formal combinations demonstrate that Guarini was very well familiar with such late antique imagery – the rare sausage-shaped space at S. Lorenzo in Turin from the great hall of the Piazza d'oro; the conjunction of a large with a small circular space at the Beata Vergine dell'Oruppa after the record in Serlio of a late antique structure etc.

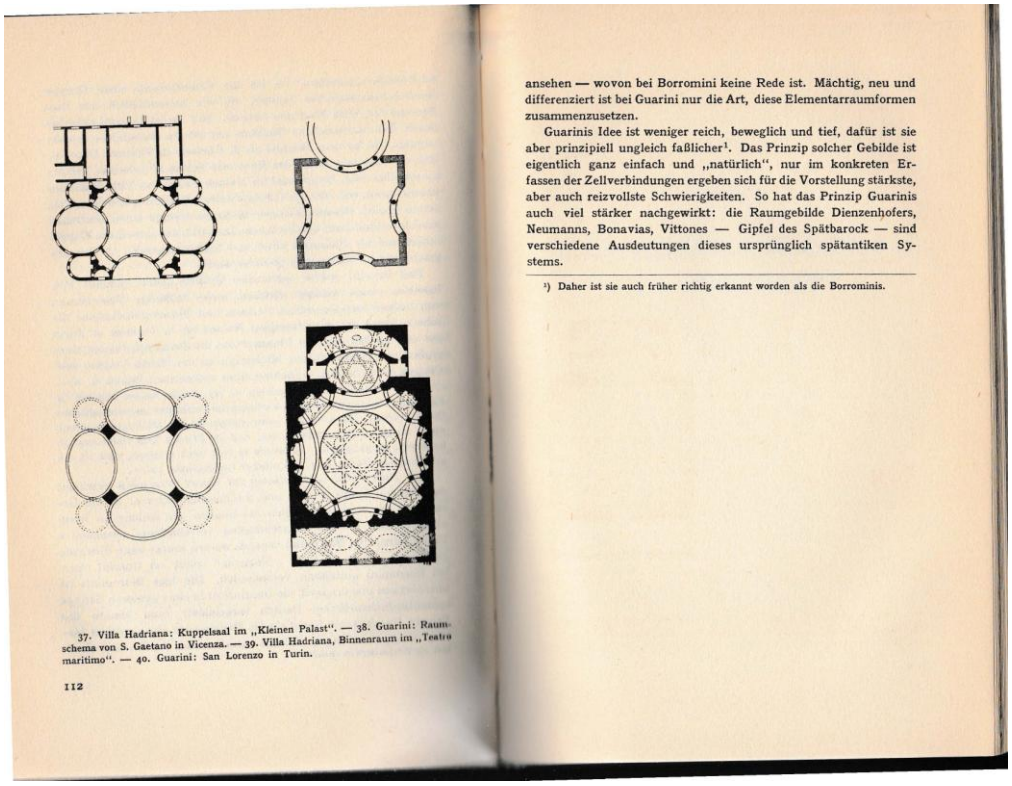
For the moment, we are unable to identify the ancient source for this basic principle; we imagine that its earlier manifestations might lie in the Hellenistic monuments of Asia Minor. Even a cursory glance suggests that these images have a distinctly Greek quality; it would be simple to demonstrate that its principle is not Roman. This could also explain why it was so much more influential in the eastern area of the Roman Empire.

52. Beside the basic principle of Borromini's art, that of Guarini appears rigid and mechanical. On the one hand, Guarini has at the beginning already completely designed the totality into the final detail – from building blocks of various elemental spatial cells. Borromini on the other hand constantly introduced new elements. With Guarini, these 'elements' are themselves rigid, while Borromini treats them as foldable and changeable. The idea of Borromini is unusually innovative and original, while that of Guarini had been developed in a certain group of late-antique and Hellenistic buildings. The Guarini principle might well be described as the

[80] The same form which arises here as a space, was used by Borromini as a corporeal form.

renaissance of an idea from antiquity – which could never be said of Borromini. What is powerful, new and refined in Guarini is merely the manner in which these elementary spatial forms are combined.

The idea of Guarini is less rich, pliable or deep but comparatively simpler to grasp in principle.[81] The principle of such images is sometimes very simple and 'natural', but there is a potential difficulty as well as an appealing quality in concretely recognizing the way in which the cells are joined. The principle of Guarini also had a stronger influence – the spatial forms of Dientzenhofer, Neumann, Bonavia, Vittone, the peak of the Late Baroque – all present various interpretations of this originally late antique system.



37. Villa Hadriana: Kuppelsaal im „Kleinen Palast". — 38. Guarini: Raumschema von S. Gaetano in Vicenza. — 39. Villa Hadriana, Binnenraum im „Teatro maritimo". — 40. Guarini: San Lorenzo in Turin.

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ansehen — wovon bei Borromini keine Rede ist. Mächtig, neu und differenziert ist bei Guarini nur die Art, diese Elementarraumformen zusammenzusetzen.

Guarinis Idee ist weniger reich, beweglich und tief, dafür ist sie aber prinzipiell ungleich faßlicher[1]. Das Prinzip solcher Gebilde ist eigentlich ganz einfach und „natürlich", nur im konkreten Erfassen der Zellverbindungen ergeben sich für die Vorstellung stärkste, aber auch reizvollste Schwierigkeiten. So hat das Prinzip Guarinis auch viel stärker nachgewirkt: die Raumgebilde Dienzenhofers, Neumanns, Bonavias, Vittones — Gipfel des Spätbarock — sind verschiedene Ausdeutungen dieses ursprünglich spätantiken Systems.

[1]) Daher ist sie auch früher richtig erkannt worden als die Borrominis.

37. Villa of Hadrian: Domed space in the 'Small Palace'. – 38. Guarini: Spatial scheme of S. Gaetano in Vicenza. – 39. Villa of Hadrian, interior space in the 'Teatro maritimo'. – 42. Guarini: San Lorenao in Turin.

[81] This is also the reason that it was recognized earlier than that of Borromini.

PART III THE ARCHITECTURE OF BORROMINI AS DOCUMENT

CHAPTER 5. ON THE PSYCHOLOGY OF BORROMINI

1. Prefatory theoretical remarks

XXI. What can we learn about the personality of Borromini from his works? Stated this way, the question is still too vague. It means that we are faced with the extant works of Borromini. Do they reveal his racial or social origins; what his temperament or physical qualities were (how he looked); how old he was when he created his work, and further along these lines.

These questions are essential if one attempts to write a biography of Borromini. Posed in this way, they are irrelevant to a study of the architecture of Borromini – in terms of the study of art ('eine kunstwissenschaftliche Untersuchung') – but they do point to a fact of the greatest importance. If it is possible to reach conclusions about Borromini's 'characteristics' as a person, then it might also be possible conversely to derive characteristics of their production from their 'given' known personal characteristics. In the most favourable situation, it might be possible to understand various separate qualities of the works (or of the architecture of Borromini generally) from a single quality of his personality.

This brings us to the question of which aspects of art works can be explained and understood in psychological terms, and therefore might be. It is unimportant which areas are generally considered psychologically explicable, but rather which aspects of an individual work of art or group of them might be concretely derived from the experience of psychology.

It is important to frame these questions as precisely as possible – since such psychological deductions and interpretations are constantly appearing in writings about art and artists, both intentionally an unintentionally, and usually in a very lax and uncritical form. This can only change when the realization is made that these are questions of psychology, and that they must be answered in the field and with the means of modern psychology (with its attention to age, race, types, etc.), and not from the experiences and assumptions of an imaginary vulgar psychology. Since the relevant disciplines are in no doubt of this, it would then not be necessary to demonstrate that such matters can be thoroughly demonstrated ('strenge Entscheidbarkeit').

XXII. Of all of the questions we have posed and which might still be posed, there is – as far as one can see – only one to be currently answered with satisfaction. Certain psychological types (and not bound by time as far as one can tell) show very definite assignable characteristics in their artistic creations, and these bear a strict correlation to the psycho-physical type of the given individual. By contrast, it has not been possible in previous research to establish distinct relations between qualities of art works and racial background. As long as it is not verifiably possible to relate the racial background of an author to a given art work, then the favourite

explanation of the architecture of Borromini that he 'came from the north', would be nothing more than a sign of lacking critical acumen. In the current state of research we are also not able to do any more than guess about the age of an artist on the basis of their work. It is possible within certain limits) to arrange a group of works according to whether they were made earlier or later; but reasons have been discovered to help in deciding whether the earlier examples are the work of a twenty year-old, a forty year-old, or the later examples by a thirty year-old or a sixty year-old. The ultimately historical question of early and late works is completely distinct from the psychological question of the work of youth or age.

In this field, which requires collaboration between the psychologist and the student of art ('Kunstwissenschaftler'), the student of art with only limited knowledge of psychological research will face great limitations from the outset. Of the many possible questions, I will for this reason only take up that one which can I believe be currently answered empirically.

2. The architecture of Borromini is a typically 'schizothyme' art

53. Since these lines were written, the distinctions made by Kretschmer between the 'cyclothyme' and the 'schizothyme' have already become a fashion. I can therefore refer to him.[82]

According to Kretschmer, the following things are characteristic of the typical schizothyme, and I refer to them freely in terms of their significance:
1. A tendency to transform given things willfully (randomness).
2. An exploitation of the most extreme possible expressive effects.
3. A tendency to unify heterogeneous elements in the same work, and to combine them in strangely unmotivated ways.
4. Presence of a rigid skeletal construction with original and richly varied details.
5. Prodigious productiveness completely out of proportion to the outward commission. Work under a persistent compulsion.
6. A mixture of abstract-analytical thought tending toward systematization and a dreamy imagination.

If one puts aside the fact that in assembling his list of characteristics, Kretschmer was thinking primarily of painters, then it would seem that the qualities he listed thoroughly describe the typical features of Borromini's art with nothing further to be desired. His feature number 2 might for instance recall the entablatures and forms of the tower of S. Andrea delle Fratte, while number 3 could conjure the presence of naturalistic, delicate flowers among the abstract and coldest of architectural forms or the famous tombs of fig, 58 and Frey, fig. 71. Characteristic

[82] Ernst Kretschmer, *Körperbau und Charakter Untersuchungen zum Konstitutions-Problem und zur Lehre von den Temperamenten*, 7th edition, Berlin: Springer, 1928. At least in the first approach, I will take his results to be correct.

number 6 confirms the basis of Borromini's architecture as completely as if it had been formulated to specifically describe it.

54. This would lead one to expect Borromini to have been a pure exemplar of the schizothyme type. The data we have about the personality of Borromini, his psychological behaviour and somatic type perfectly confirms that this is true. These records describe him as the most typically imaginable example of a certain manifestation of the schizothyme person and artist.

His social behaviour is itself most typical. This consisted in a retreat from the external world – the autism described by Bleuler – and a living into one-self. Hempel says: 'Like the great guiding star of his life, Michelangelo, Borromini also concealed a sensitive heart behind a rough rejection of his surroundings, to which he wished to make no concessions or commitment'. In order to work according to his own ideal, he did not accept money from anybody other than the pope unless it was offered to him freely. He became involved in his own world of thoughts. He dressed according to older fashions – in the Spanish style! in black! – 'differently than the others'. Frey has completely mistakenly taken this to be a sign of Romanticism. To anybody familiar with the other information about Borromini as a personality, it should be obvious that his old-fashioned dress was not due to a preference for an earlier historical period (like certain 19th century painters), but more by turning up his nose at 'fashion' ('Gutangezogensein'). This was after all not 'historical' costume, but simply one which had become unfashionable! Its emphasis was on appearing 'different from the others'.

Filippo Baldinucci, who was well informed in this, added a number of other telling details. Borromini suffered 'umore malinconico; o come dicevano alcuni de' suoi medesimi, d'ipocondria, a cagione della quale infermità, congiunta alla continua speculazione nelle cose dell'arte sua, in processo di tempo egli si trovò si profundato e fisso in un continuo pensare, che fuggiva al possibile la conversazione degli uomini standosene solo in casa, in null'altro occupato che nel continuo giro de' torbidi pensieri, che alla sua mente somministrava del continuo quel nero umore: ed erasi ormai ridotto a tale, che il mirarlo solamente era una compassione, e pere lo stralunar d'occhi e 'l guardar che faceva, lanciando di punto in punto occhiate spaventose, che mettevano altrui gran terrore'.

As Frey has published it, the justification for dismissing him from the planning of S. Agnese reads almost like a clinical study of an emerging schizophrenia. His 'natura difficile ed inflessibile' make it intolerable to work with him. He gains the enmity of all workers and drives them to exasperation by his 'ordini irresoluti'; every day and even every moment, he changes his obscure and irresolute orders. (Although his contributions to the minutes of the council of the construction are striking for their clear objectivity). For many months he only rarely appeared at the construction site, and then only to rapturously contemplate (vagheggiar) a certain 'modello di capriccio'. He pays no attention to the most important things. His aversion to visiting the construction was so great that when he was called to finally make an appearance, he did so expressly without entering

the building while the workers were forced to shruggingly interrupt their progress for days on end due to a lack of guidance in his demands for the most recent technical perfections. This led to a complete break in 1657. (This was the time in which the above described artistic shift occurred). In 1659 he ordered a worker caught damaging the architectural details to be punished so severely that the man died. In 1667 (at the age of 68), he was taken with fever and 'nervous conditions' (?) so that a physician prescribed bed rest. In the night of the first to the second of August he sleeplessly called for light which the servant refused at physicians' order, and this led him to gore himself with a rapier 'in a passionate impatience and wild despair'. A few days earlier, he had written his testament and burned most of his drawings to prevent them from being used other than he intended.

The somatic characteristics: he is large and physically robust (an athletic type?). His portrait reveals the tormented features of a melancholic in a typical lost profile.

55. In studying the art of Borromini, the gain lies in the fact that from this vantage point many separate characteristics of his art converge – as expressions of a certain psychological type in the field of art. When seen in isolation, there is no direct indication that such a massive productiveness and the tendency to crass expressiveness belong together so intimately; in relation to this personality type, one can begin to understand them as various peripheral manifestations of a typical attitude. We can grasp them all from the simple fact that Borromini was a schizothyme type. For this reason – and this is important methodologically, one should no longer interpret these aspects of his art (as such) as data for intellectual history (or otherwise). One will discover these characteristics in all works by schizothyme artists (of this particular type) and completely independently of the 'spirit of the age' ('Zeitgeist') or the artistic will' ('Kunstwollen'). It can however be understood in terms of intellectual history that a schizothyme artist should have decisively influenced the development at this historical moment, and then continued to exercise a strong influence. 'This causes autistic thought to ferment in the transition from one historical reality to another' (Kretschmer). We shall show how Bernini was able to announce, but not to carry through the revolution in architecture toward which everything was developing. His disposition made him unable to grasp the concept of architectural structure. This seems nearly to have called for a schizothyme personality. It is characteristic that the historical 'motor' of this period was not the copious Bernini, but instead the oddball of Borromini.

56. Since these characteristics of Borromini's architecture are typical timeless features of all schizothyme art, they make up very little in the way of the individual properties of his art and its historical significance. For this reason, they can never provide the basis for the arrangement (classification) either of a purely structural study of art or a consideration in psychological terms. This is the sort of – psychological – comparison in which Borromini has been placed in a class with Michelangelo, and it is apt at this level. After experiencing a schizothyme impulse, Michelangelo had particularly at a more advanced age become an example, like

Borromini, of the schizothyme artist. This comparison is valid only from this particular psychological point of view. If the two are compared not for the 'traces' of psychological types, but by their inner objective constitution, then it will be apparent that in spite of certain points of contact, the architecture of Borromini and of Michelangelo have nothing in common.

57. In attempting to explain the late style of Borromini, it is necessary to remain aware of this difference between purely psychological and art historical aspects. Pollak has described the stylistic change which took place, and for the first level his description can remain valid. Although he uses the concepts which Riegl had developed to comprehend the far larger historical forces, and which cannot do complete justice to the specific shift at hand here, it is nonetheless clear what he intended. This change was characteristic of the late 1650's and early 1660's, and can also be traced outside of the oeuvre of Borromini. One should make it comprehensible historically. Aside from this however, one must also understand certain changes in the characteristics of the late work in purely psychological terms – as typical of the development of schizothyme types in all historical periods. It is typical for all of the qualities described by Kretschmer to emerge in later work after having been less obvious at an earlier age. For instance, the subdued and dry quality of the early works was replaced by a force of imagination which filled the same forms with an uncanny expressive content. One might compare the genetically identical forms of the lanterns of S. Carlo, S. Ivo and of the tower of S. Andrea delle Fratte (top level) which illustrate three phases of this development, or the facade design for S. Carlino (rather than that of the Oratorio dei Filippini) with the executed version on the same church. This reveals changes not to be explained either by the 'spirit of the time' or the intrinsic movement in the art of Borromini, but simply from the fact that the schizothyme habit of Borromini became typically more intense as he grew older.

58. On the basis of this diagnosis – from the historical data – of emerging schizophrenia in Borromini beginning around 1650, it seems possible to explain something which we have not yet even mentioned. This is the similarity of some of the later work of Borromini with exotic architecture. The exterior of the dome of S. Ivo for instance has a distinctly 'exotic' character, particularly apparent to a viewer who might not have studied the history of architecture. It is a quality recalling 'India' or 'Thailand', as does the top of the tower of S. Andrea delle Fratte or the detail of the Palazzo Carpegna, illustrated by Hempel in his plate 82, 2. It is difficult to place a finger on the precise nature of the similarity. In any case, it is not limited to the motif exclusively, which might have been given a more strongly European character, but can be seen more clearly in the expressive quality as 'visionary' or 'pseudo-organic', as we have attempted to describe it above, and as it gains a different interest in this context. This is no less real than the formal structure lying 'below'.

Recent psychology and psychopathology has recognized that some products of the 'insane,' and particularly of schizophrenic thinking, share certain similarities

with those of the so-called 'primitive' mode of thought and spirit. The only controversial aspect lies in how to interpret this. In our particular case it is obviously not possible to imagine that changes in the pathological process of Europeans would reduce them to a primitive state, an earlier stage of development. This is presumably due to certain commonalities in the construction of their 'world' as it exists for them and leaves its trace in their work. Among these common qualities, I would like to stress that of a 'physiognomical' conception. In other words, the intellectual manner of schizophrenics is not primitive, but more nearly 'quasi-primitive'. A schizoid artist does not produce primitive art, but rather art including certain quasi-primitive characteristics. One of these characteristics is the predominance of the expressive function within the whole.[83]

This also allows us to understand why we are reminded of 'India' or 'Thailand' rather than Aztec, prehistoric or African architecture. It is those artistic spheres 'presenting' themselves where at least in certain examples there is a mélange of formal schemes derived from the Hellenistic 'Baroque' with surviving primitive modes – although by no means mixed in a way recalling the Baroque and pseudo-primitive forms in Borromini.

This exoticism in the architecture of Borromini – and for the same reasons also Guarini – presents a very different situation than when exotic forms and motifs, such as Indian and Aztec, were taken up in the Spanish Baroque for instance. The one phenomenon is explained purely historically and the other psychologically. It becomes very clear that it is not possible to make a clean distinction between the psychological questions from those belonging more strictly to the study of art. To do such a thing would lead one on the basis of theoretical prejudice to abandon an explanation of phenomena which might well be understood if only not historically.

CHAPTER 6
ON THE BORROMINESQUE WORLD VIEW

1. Prefatory theoretical remarks

XXII What can the works of Borromini tell us about conception of the world (the image of the world) which they belong to organically? Posed in this form, it would be possible to give a strict answer to the question which has stood at the centre of attention for so long. This would again be best divided into further individual questions. Given a group of architectural works with intrinsically related structures – is it possible to derive the relevant world view? This question is based on the primitive experience that a certain conception of the world presents an

[83] Cf. Dmitri Usnadse, 'Zum Problem der Bedeutungserfassung', *VIIIth International Congress of Psychology held at Groningen from 6 to 11 September 1926 under the presidency of Gerardus Heymans, Proceedings and Papers*, Cambridge: University Press, Groningen: Noordhoff, 1927, 440-442.

intrinsic unity, so that the conception of space and then of time as well as matter, life, humanity for instance all seem to belong together organically and to require, to bear and to supplement one another reciprocally. Then also the other question as how such a world view impresses itself on all of the images it emits, however unequally. (It does not express itself equally characteristically in all things). On the other hand, it would be incorrect to inquire as to the 'private' world view of Borromini since there is no indication that this had an organic unity. To the contrary, our crude experience in this shows that the world view of an individual might consist of levels and possibly fragments of various world views (and developmental stages of the same world view). In reconstructing a world view, the individuals are generally only the 'places' where a given world view reaches its realization. The world view is a reality transcending individuality.[84]

In this again, the important point is not whether one believes the qualities of the architecture to necessarily derive from the world view (or vice versa), but what can actually be derived in a strictly controlled example. Only to the degree that we can clearly derive certain traits is it admissible to us to submit the world view in an explanation of certain characteristics of an image. When these conditions are not present, then an 'interpretation in terms of world view' ('eine "Weltanschauungs-Interpretation"') remains nothing more than pretentious jargon.

XXIV. Architecture and the works of other absolute arts are quite distinct in this way from examples of literature or painting, where the core level is melded in with other levels (religious, philosophical etc.) which together form a far broader basis for deducing the world view. On the other hand, this allows the 'silent' works of architecture reveal all the more clearly which particular elements play a part in this. The program of 'art history as intellectual history' has yet to prove its potential in the field of the 'absolute' arts.

It appears quite possible to reach certain conclusions about conceptions of real space, bodies, materials, masses and so forth from a given conception of architecture (of architectural space, architectural 'forms,' architectural 'material' etc.) and to reconstruct these 'aspects' of the concomitant world view. On the other hand it is doubtful whether it is possible in the same way to directly reach conclusions about emotional life, humanity or the deity generally on the basis of architecture. If there were undisputed types of world view, then it might become possible to extrapolate the entire image from a small fragment of evidence so to speak, from just one or a few characteristics. It is precisely this approach which we should take in our particular case.

Such an attempt leads us to realize that the preliminary work on which one might build does not (even in terminology alone) possess the same incisiveness as the field of psychology. What is by far the best work of this sort has been done not in the subject of the relevant ideology ('Weltanschauungslehre') but rather in the

[84] On this cf. Albert Vierkandt, *Gesellschaftslehre*, 2nd ed., Stuttgart: Ferdinand Enke, 1928, and José Ortega y Gasset, 'Die Aufgabe unserer Zeit' [Zürich: Verlag der Neuen Schweizer Rundschau, 1928; El tema de nuestro tiempo, The Modern Theme], passim.

field of ethnography, the study of primitive societies and related disciplines. Any study of historical world views must necessarily take that as its point of departure, and this should convince us that such questions can be decided objectively ('strenge Entscheidbarkeit').

XXV. There is one thing however, which one immediately recognizes. Only limited qualities of art works made by a certain person can be derived from their given psychological constitution, and this can never yield an insight into their unique structure. It is concomitantly only possible to understand certain general characteristics such as the organically pertinent architecture, but never their totality. Fashionable interpretations of world-views with claim to explain every aspect of an art work themselves fall into the same error as the inept 'psychologizing' which they themselves disdain.

2. The architecture of Borromini expresses a 'Cartesian' conception of the world

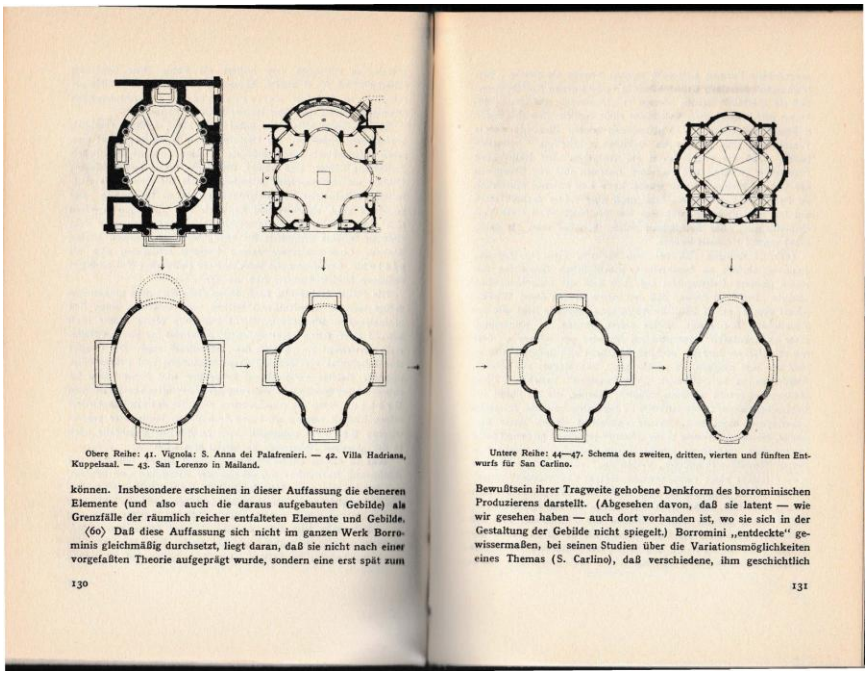
59. In the Borrominesque conception of architecture, the individual image is not taken to be the ultimate unit, but instead these are themselves constructed from 'elements'. This brings images together which in a 'naive' view might appear to have nothing in common. For instance, the interior of S. Ivo has a unity based on a group of three parts which occur again on the facade of Sta. Maria delle sette dolori, while the lantern of S. Ivo includes six elements which in isolation are the form of a tomb (Hempel, plate 64, 1). Images with differing characteristics might therefore appear as variant groupings (constellations) of the same ultimate unity (element).

The elements themselves are not rigid in this, but can be developed in various spatial ways. At the upper level of S. Carlino, the same element recurs from the lower level, but simply in another spatial mode. Beyond that initial step, this allows us to conceive images as structurally identical, when the naive view might not have recognized any relation whatsoever. For a structural study, the outwardly very different designs for S. Carlino reveal themselves to be clustered around metamorphoses of the same ultimate unit. Forms with variant characteristics then appear as the same groupings of varying spatial developments within the same ultimate unit: fig. 41-47.

There are sequences of simple significant geometrical bonds being realized in the structural schemes according to which they are joined. To amplify this sentence I must refer to a section already published from my second volume ['Zum gestalteten Sehen', *Belvedere*, 9-10, 3, 45, March 1926, 57-62]. These images are replete with geometrical bonds and 'necessities'. Images with differing proportions or forms revert into one another by a simple change in the constitutive geometrical factor. This is something to be dealt with at greater length in the 'second approach' [the projected second volume never published].

What we have been observing separately is conceived by Borromini as narrowly related, and has the effect that for him, the entire manifold of architectural

imagery possesses an 'atomistic' and 'geometrical' structure. Individual buildings do not present rigid and indissoluble unities, but are rather various constellations of a relatively small number of final elements (motifs), which might themselves change and revert into one another. According to this conception, the flatter elements (and the images constructed from these) appear as borderline cases of those elements and images developed with a greater spatial richness.



Obere Reihe: 41. Vignola: S. Anna dei Palafrenieri. — 42. Villa Hadriana, Kuppelsaal. — 43. San Lorenzo in Mailand.

können. Insbesondere erscheinen in dieser Auffassung die ebeneren Elemente (und also auch die daraus aufgebauten Gebilde) als Grenzfälle der räumlich reicher entfalteten Elemente und Gebilde.

〈60〉 Daß diese Auffassung sich nicht im ganzen Werk Borrominis gleichmäßig durchsetzt, liegt daran, daß sie nicht nach einer vorgefaßten Theorie aufgeprägt wurde, sondern eine erst spät zum

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Untere Reihe: 44—47. Schema des zweiten, dritten, vierten und fünften Entwurfs für San Carlino.

Bewußtsein ihrer Tragweite gehobene Denkform des borrominischen Produzierens darstellt. (Abgesehen davon, daß sie latent — wie wir gesehen haben — auch dort vorhanden ist, wo sie sich in der Gestaltung der Gebilde nicht spiegelt.) Borromini „entdeckte" gewissermaßen, bei seinen Studien über die Variationsmöglichkeiten eines Themas (S. Carlino), daß verschiedene, ihm geschichtlich

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p. 130: Upper row: 41. Vignola: S. Anna dei Palafrenieri. 42. Villa of Hadrian, Domed space. – 43. San Lorenzo in Milan.
p. 131: Lower row: 44-47, Scheme of the second, third, fourth and fifth designs for San Carlino.

60. The fact that this conception did not manifest itself with equal force throughout the oeuvre of Borromini is because it was not applied on the basis of a pre-conceived theory, but was a mode of thinking in Borromini's production, whose scope only became apparent at a relatively late stage in his career. (Leaving aside that it is also latently present, as we have seen, where it is not reflected in the form of the imagery). In his studies of the possible variations of a theme (S. Carlino), Borromini 'discovered' that various historical forms could be conceived as equal fundamental units within differing variations; also that they might be 'dissolved' into 'elements' providing the ultimate units of the architectural imagination; finally that they might also 'synthetically' generate other constellations of those ultimate units discovered in this way. It is hardly possible that he would have realized at the outset that this should lead to a negation of all isolating barriers between the individual images, but must later have had a strong effect on him since this provided a possibility for the unity of all architecture as this until then could barely have been dreamed.

61. In attempting to describe this phenomenon as simply as possible, one is forced to think of terms from another field, that of modern chemistry. This is because its conceptual basis is formally similar to the architecture of Borromini. Both begin with an 'elementary' atomist structure of bodies – the one chemical and the other architectural. This makes it possible to 'discover' that bodies consist of such elements in various 'combinations'. From this conception, it becomes possible to divide bodies previously considered indivisible into further constituent parts which cannot themselves be decomposed – like atoms. It further permits us to isolate ultimate elements, as they do not occur in 'nature' (history), and of 'recombining' them, or 'synthetically' constructing new bodies from these isolated elements. This analogy is no extrinsic comparison but is based on an actual affiliation of notions as they exist in relation to the inner structure of chemical and architectural forms, relating a priori in a certain sense to the concrete results resulting from them.

Just as Lavoisier 'viewed' chemical 'bodies' as consisting of 'elements', so does Borromini view architectural forms as constructed from relief elements.

If it is admitted that this similarity in conception as we have claimed in fact exists (between 'new' chemistry and Borromini's architecture), then one is led to believe that there are a priori conceptions of reality independent of the specifically material character of the 'realities' toward which they are directed. (If and how such a conception succeeds will of course depend exclusively on that reality). This would however create the possibility of migrating from the notion of the architectural or of the chemical world into a conception of gratuitous 'realities'.

We shall suggest one central characterization to identify such a formal scheme of conception with the capacity of gearing toward the greatest variety of 'realities' – this is an attitude always hunting for the ultimate irreducible units allowing the relevant objects of their field to be assembled synthetically, and whose qualities and relations provide the source for all others. Its ideal is to deconstruct any 'world' into its constituent components. It proceeds from the aggregates back to the simplest and universal parts not allowing any further division, and composes all higher unities from these simpler units according to simple repetitive operations. Everything else follows from this basic characteristic.

The quality so-described provides the central characteristic of the 'Cartesian' world view in all of its known variations. Since the growing aversion to this world view (and its effects in life) has recently led particularly to a deeper understanding of its constitutive characteristics, it is not necessary to further dwell on this.[85] Born in 1596, René Descartes was an exact contemporary of Borromini, born in 1599. This might be taken as a fact to confirm our observations since a relatively equivalent intellectual attitude was necessary of its success while it emerged nearly concurrently in the various areas (however long it might have taken for its influence to set in).

[85] Cf. Ernst von Aster, *Geschichte der Philosophie (Lehrbuch der Philosophie)*, Berlin: Ullstein, 1925.

Our conclusion regarding this parallelism is further supported by the fact that the conception of modern chemistry shares the same assumptions as the Cartesianism. In a certain sense, the atomism of modern chemistry is simply a particularly successful application of this proclivity, and can also be confirmed in completely different subjects – such as the conception of the 'soul'.

Our conclusions are finally also supported by the fact that the Cartesian world view organically includes a number of ideas also found in the conception of architecture in Borromini – applied to a different substratum.

This is a profound dualism – in Descartes between bodily and spiritual substance, in Borromini between geometrical and organic values (although this opposition did not become an aesthetic ideal). If this strict division had the result 'that Descartes extends his mechanistic explanation of the world to the processes of life as they play out within the body' and ultimately 'breaks with the entire ancient characterization of the soul as formal principle of bodily life', then similar things can also be said of Borromini's conception of the essence of architecture. For all of its proximity to its forms, there might not be any architecture more remote from the spirit of antiquity than the architecture of Borromini.

62 a. These conclusions only apparently contradict the view that Borromini might be related to the 'spirit' of the Counter-reformation. When the art of Borromini is seen as an artistic expression of the same attitude created by the Counter-Reformation in the field of religion, then this claim has a very different nature. This similarity is sought and found at quite a different level in the art of Borromini. The emotive character of Borromini's imagery, its 'expression', seems similar to that which can be observed in the expressions of Counter-Reformation religiosity.

Such a claim is meaningful and poses a unique and interesting question. The only thing is that this one is far more difficult to resolve than the other. We do not have precise and good descriptions of intellectual attitudes of the Counter-Reformation in its expressive and emotive aspect. Until this is before us, it will not become possible to ascertain whether the two are actually the same. This is followed by a difficulty of another order – contrary to their objective structure, the expressive character of images is something very volatile and multivalent. It is a simple matter to reinterpret a certain architectural 'movement' ('Bewegtheit') as the visual expression of a religious movement. Some of our contemporaries perform a similar operation when they assimilate what is to them the confusing architecture of Borromini by relating the movement of his architectural forms to the movements of nature – which they are able to positively appreciate both aesthetically and emotionally.

At the moment, it cannot be decided whether an intrinsic relationship actually exists. If this should be the case, then it would provide one more symptom of a profound division within the forces generating form in the art of Borromini. In any case, the usual lax attention paid to such questions is of no value.

3. The 'Cartesian' world view is a typically schizothyme conception of the world

63. The conclusions of our fifth and sixth chapters can still be placed within a more elevated context – it is apparent that the Cartesian world view (Kretschmer even cites Descartes as a prototype). One must bear in mind that in ascertaining this one can only derive a few very vague characteristics of Cartesianism and very naturally not all. What this means is that people with a schizothyme character can most easily identify with the objective schizothyme characteristics of this world view – which is itself beyond psychological categories. For those of a different psychological disposition, it remains available as a purely theoretical assumption with no relation to the depths of the personality. The relationship between the architectural conception of Borromini and the Cartesian world view is based not merely in the fact that both are typical products of schizothyme thinking, but beyond this also in far more concrete and objective characteristics.

Even if they are accepted as 'tenable', the conclusions of our sections 59-62 contribute strikingly little to the explanation of concrete 'graphic' formal qualities of Borromini's imagery. As long as we practice the study of art as actual the study of art, it would be far simpler to omit them than those insights available from the psychological analysis of Borromini's art. I believe that this situation is worth considering and should not be difficult to understand.

SKETCH FOR PART 4
THE HISTORICAL PLACE OF BORROMINI

1. Prefatory theoretical remarks

XXVI. If one wishes to make a study, even in the field of art, not to forfeit decidability or strict objective clarification, and not to settle for incidentals, then particular difficulties arise in extrapolating occurrences from their own results. We have already mentioned one of the cardinal difficulties (section 46, XX). In 1927, Kurt Lewin delineated a number of further essential points surrounding these difficulties incumbent on research of any sort of temporal development ('jeglichen Geschehens').[86] These also arise in our field. There are also others which we shall be required to treat in some detail, when in our 'second approach' we direct our attention to reconstructing the historical development which produced the architecture of Borromini. Such an essay requires preparatory work which does not yet exist and cannot be performed so quickly. The following section provides a provisional sketch of some tentative conclusions and points of view. We have added it here to demonstrate what a strictly handled historical explanation of Borromini's

[86] Kurt Lewin, 'Gesetz und Experiment in der Psychologie', *Symposion*, 1, 4, 1927, 375-421.

art can and should contribute to its timeless, 'pure' description and psychological explanation.

2. The period of the 'architectural orders' ('more recent architecture')

64. The developments from around 1630, which gave rise to the work of Borromini, were part of a more general historical segment which alone can illuminate its significance. To ascertain the borders of this 'whole' we first direct our attention to one of the 'essential' characteristics of the imagery produced then. When seen in terms of a certain fundamental quality, the great majority of images produced in 'Western Europe' from approximately 1440 to 1790 form a coherent group – the architecture of this period was based on the 'architectural orders'. The orders of the columns play a constitutive role and generate the structure of these images. Their significance becomes clearest if we perform the 'Gedankenexperiment' of imagining if the orders had been eliminated – this would annihilate the unique structure of these buildings. One might think of S. Carlino for instance, but the same is true of the vestibule of the Laurenziana and all other buildings of this kind. For this reason, an analysis of the spatial form without a consideration of the orders would necessarily fail – because there is no such thing as a spatial form outside of the structure which it receives through the orders. This is yet more true of the corporeal forms of the architecture. In the degree to which one is able to imagine without the orders – sees them as no more than an enrichment – and without essentially damaging the fundamental structure, one approaches the limits of this group and of this epoch. When the bare forms of the blocks appear then the border has been traversed.

65. A typical relationship of the fundamental form and the 'overlaid' structure becomes apparent from the very possibility of this imaginary 'elimination' without creating gaps in the architectural mass. It is not possible to imagine a Greek temple without the columns and without disrupting the fundamental form; at the church of St. Peter's or S. Carlino this is possible. There, the function of the architectural orders had been constitutive – as much as in the Gothic, if its piers and supports are for a moment imagined as columns. Here now, they are only constitutive – the architectural orders generate an artistic structure but not simultaneously the skeletal construct of the basic form. Historically, this relationship first appeared in the Hellenistic period and became a principle of Hellenistic-Roman architecture. The bare form of the wall and the columns come from two different sides and join while remaining malleable independently of one another. From this independence of the orders from the basic form makes it possible to employ them in a very different sense, and by changing the 'orders' for instance to structurally alter the basic form radically.

66. This is to say nothing about the function assumed by the 'architectural orders' within the individual buildings from this period. Yet even where the function and canon of the orders was revolutionized, their existence was not called

into question. It has not been sufficiently appreciated that such innovators as Michelangelo and Borromini conceived, formed and employed the orders in a new way each time, but never had the idea of abolishing them. Until the positive significance of this fact has been recognized, it will never become possible to properly discern the unity of this period. It is through the adherence to the constitutive function of the architectural orders that this period achieves its 'historical continuity.' It is a 'convention,' but one of a significance comparable to the limitation of occidental music to given 'scales' and harmonic progressions.

67. This reference provides the best provisional clarification of the 'architectural orders' and their meaning, while their very differentiated function could only be demonstrated by a most careful analysis of their structure. This meaning is bound up with the heavily normative proportions and relations. This does not however dictate the type which these proportions took in a given case – proportions might be 'harmonic' or 'unharmonic' and relationships consonant or dissonant. The desired proportions might be realized in the relations of the objective things themselves, or only appear in visual 'images' received in viewing the architecture. Without doubt, there are still a number of other differences waiting to be discovered by a more profound analysis. Another closely related matter: from the boundless multitude of possible combinations among the elementary forms, only a certain area and certain levels were admitted as material to translate into form. This region could be modified, expanded or shifted by an individual architect, but even then would remain sharply delimited. Individually, the architectural orders might appear quite diverse, but by and large their types persisted and remained fixed throughout this entire period.

This multiple limitation of the admissible 'elementary forms' and their combinations provides the basis for understanding the immense richness and unmatched subtlety of the best works from this period – somewhat as the original limitation to only certain figures, fields and moves provided the rich structure of a chess game. All achievements and 'stylistic' distinctions stems from a natural recognition of the firm given 'rules'. It is a great misunderstanding to take these 'regola dei cinque ordini' to be a symptom of academicism or something of that kind – the difference between the academic and the revolutionary, between the pedant and the eccentric lies beyond this distinction. (In the game of chess there are also academics and revolutionaries – but they do not distinguish themselves by either following the rules or breaking them).

It is correct that these limitations created the profound rationality of this architecture and that this generated dangers unto themselves. It is no coincidence that the period of the architectural orders was the only epoch to be accompanied by a consistent and rational architectural theory – another parallel to 'modern music'. This also teaches us what undesired consequences can follow from this. The disappointing demise of this great movement in classicism ('im "Zopf"') might be understood in a new light when viewed in this way.

68. The limits of the historical situation delineated above will therefore lie where this constitutive function of the architectural orders either existed not yet or no longer. They do not present an inflexible section, but are themselves smaller 'epochs' with typical characteristics of 'transitional periods'. At the early end this is the period before Alberti, i.e. that of Brunelleschi. The architectural orders were being used at that time, but without as later lending the building its actual structure.[87] At the later end, this is the period after 1780-1790, the period of Goethe and the revolution, when the architectural orders were pushed from their constitutive role in generating structure.[88] Outwardly, the products of these borderline periods often overlap by including bare wall surfaces with no articulation by the architectural orders. A coherent theory of architecture existed from Alberti to the 18th century. One will finally recognize that to understand the conditions for and influence of the architecture of Borromini, it will occasionally become necessary to recognize the nature of these transitional phases.

69. It is important to emphasize the unity of this period, which cannot be completely comprehended by the usual scheme of Romanesque-Gothic-Renaissance etc., or even by the more refined 'polyphone' periodization given by Wilhelm Pinder. Not all breaks within the sequence are equally profound. If one attends to this fundamental quality, then the traditional conception of all architecture between Alberti and the year 1800 as a single period must be quite correct.

Viewed in this structural way, the period belongs 'naturally' in a class together with Hellenistic-Roman architecture to which it is related causally and which provided the genetic source of its forms – with only few exceptions. The differences between the two exist at a different level, and have not yet been studied in sufficient detail.

3. Types of projective structure (Classical art, High Baroque, Late Baroque)

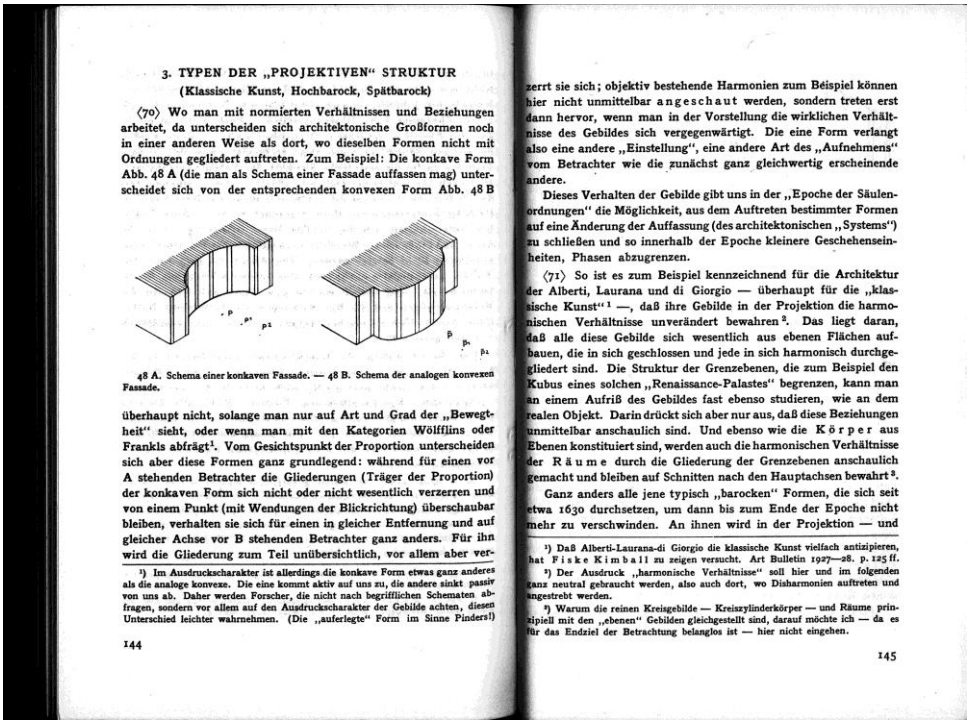
70. Where normative relationships and proportions were being used, the large architectural forms distinguish themselves in still another way from those where they were not articulated by the architectural orders. When taken as the scheme of a facade, a concave form does not at all distinguish itself from a convex form if one limits attention to the manner and grade of 'movement', or applies the categories used by Wölfflin or Frankl.[89] However, when seen in terms of

[87] Cf. Hans Willich, *Die Baukunst der Renaissance in Italien*, Handbücher der Kunstwissenschaft, Potsdam: Athenaion, 1914.

[88] Cf. Emil Kaufmann, 'Architektonische Entwürfe aus der Zeit von der französischen Revolution', *Zeitschrift für bildende Kunst*, 63, 87, 4, 1929, 28-36.

[89] In its expressive character, the concave form is something completely different from the analogous convex. The one approaches us actively while the other recedes passively. For this reason, it will be simpler for students geared to the expressive character to recognize and

proportions, these forms are fundamentally distinct from one another. For a viewer standing before the one, the concavity will not essentially distort the articulation (vehicles of the proportions) and from one particular standpoint (with a swivel of the head) will actually remain completely coherent. From the same distance, the convex version will appear completely different. Its articulation will not offer a coherent overall view, and will be distorted. Objectively existing harmonies cannot be viewed directly, but only appear then when one imagines the actual relationships within the image. The one form demands a different 'disposition' ('Einstellung') and a different 'perception' ('Aufnehmen') on the part of the viewer than the other – which can on the surface be seen as identical.



3. TYPEN DER „PROJEKTIVEN" STRUKTUR
(Klassische Kunst, Hochbarock, Spätbarock)

⟨70⟩ Wo man mit normierten Verhältnissen und Beziehungen arbeitet, da unterscheiden sich architektonische Großformen noch in einer anderen Weise als dort, wo dieselben Formen nicht mit Ordnungen gegliedert auftreten. Zum Beispiel: Die konkave Form Abb. 48 A (die man als Schema einer Fassade auffassen mag) unterscheidet sich von der entsprechenden konvexen Form Abb. 48 B

48 A. Schema einer konkaven Fassade. — 48 B. Schema der analogen konvexen Fassade.

überhaupt nicht, solange man nur auf Art und Grad der „Bewegtheit" sieht, oder wenn man mit den Kategorien Wölfflins oder Frankls abfrägt[1]. Vom Gesichtspunkt der Proportion unterscheiden sich aber diese Formen ganz grundlegend: während für einen vor A stehenden Betrachter die Gliederungen (Träger der Proportion) der konkaven Form sich nicht oder nicht wesentlich verzerren und von einem Punkt (mit Wendungen der Blickrichtung) überschaubar bleiben, verhalten sie sich für einen in gleicher Entfernung und auf gleicher Achse vor B stehenden Betrachter ganz anders. Für ihn wird die Gliederung zum Teil unübersichtlich, vor allem aber verzerrt sie sich; objektiv bestehende Harmonien zum Beispiel können hier nicht unmittelbar angeschaut werden, sondern treten erst dann hervor, wenn man in der Vorstellung die wirklichen Verhältnisse des Gebildes sich vergegenwärtigt. Die eine Form verlangt also eine andere „Einstellung", eine andere Art des „Aufnehmens" vom Betrachter wie die zunächst ganz gleichwertig erscheinende andere.

Dieses Verhalten der Gebilde gibt uns in der „Epoche der Säulenordnungen" die Möglichkeit, aus dem Auftreten bestimmter Formen auf eine Änderung der Auffassung (des architektonischen „Systems") zu schließen und so innerhalb der Epoche kleinere Geschehenseinheiten, Phasen abzugrenzen.

⟨71⟩ So ist es zum Beispiel kennzeichnend für die Architektur der Alberti, Laurana und di Giorgio — überhaupt für die „klassische Kunst"[1] —, daß ihre Gebilde in der Projektion die harmonischen Verhältnisse unverändert bewahren[2]. Das liegt daran, daß alle diese Gebilde sich wesentlich aus ebenen Flächen aufbauen, die in sich geschlossen und jede in sich harmonisch durchgegliedert sind. Die Struktur der Grenzebenen, die zum Beispiel den Kubus eines solchen „Renaissance-Palastes" begrenzen, kann man an einem Aufriß des Gebildes fast ebenso studieren, wie an dem realen Objekt. Darin drückt sich aber nur aus, daß diese Beziehungen unmittelbar anschaulich sind. Und ebenso wie die Körper aus Ebenen konstituiert sind, werden auch die harmonischen Verhältnisse der Räume durch die Gliederung der Grenzebenen anschaulich gemacht und bleiben auf Schnitten nach den Hauptachsen bewahrt[3].

Ganz anders alle jene typisch „barocken" Formen, die sich seit etwa 1630 durchsetzen, um dann bis zum Ende der Epoche nicht mehr zu verschwinden. An ihnen wird in der Projektion — und

[1]) Im Ausdruckscharakter ist allerdings die konkave Form etwas ganz anderes als die analoge konvexe. Die eine kommt aktiv auf uns zu, die andere sinkt passiv von uns ab. Daher werden Forscher, die nicht nach begrifflichen Schematen abfragen, sondern vor allem auf den Ausdruckscharakter der Gebilde achten, diesen Unterschied leichter wahrnehmen. (Die „auferlegte" Form im Sinne Pinders!)

[1]) Daß Alberti-Laurana-di Giorgio die klassische Kunst vielfach antizipieren, hat Fiske Kimball zu zeigen versucht. Art Bulletin 1927—28. p. 125 ff.

[2]) Der Ausdruck „harmonische Verhältnisse" soll hier und im folgenden ganz neutral gebraucht werden, also auch dort, wo Disharmonien auftreten und angestrebt werden.

[3]) Warum die reinen Kreisgebilde — Kreiszylinderkörper — und Räume prinzipiell mit den „ebenen" Gebilden gleichgestellt sind, darauf möchte ich — da es für das Endziel der Betrachtung belanglos ist — hier nicht eingehen.

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48A. Scheme of a concave façade. – 48B. Scheme of an analogous convex façade.

In the 'period of the architectural orders', such a variation within the image allows us to recognize a change in conception (of the architectural system), and to distinguish smaller historical increments and phases within the epoch.

71. For instance, it is characteristic of the architecture of Alberti, Laurana, Francesco di Giorgio, and of 'classical art' generally, for its projections to retain the

perceive than for those more interested in conceptual schemes. ('Applied' form in the sense of Pinder!).

harmonic proportions.[90] This is due to the fact that all of these buildings are essentially constructed from flat surfaces, self-enclosed, and each of them harmonically articulated.[91] It is possible to study the structure of the bordering surfaces as they enclose the cube of such a 'Renaissance palace' as easily from its elevation as standing before the monument itself. This reveals nothing more than that these relations are directly visible ('unmittelbar anschaulich'). Just as the corporeal forms are constructed from surfaces, so too are the harmonic relations of the space evoked by the articulation of the bordering surfaces, and retain their character in sections taken along the main axes.[92]

All of those typically 'Baroque' forms arose around 1630 and then persisted until the end of the period. They involve a distortion of the structural articulation in the projections as well as in the manner of viewing. Those relations which are 'good' in terms of a valid canon of proportions, and exist in the objective state of the buildings, will become 'bad' to the same canon of proportions. To grasp them it would be necessary to take measurements from the building ('haptically' rather than 'optically'), or else to imagine oneself within the image, and to follow all of the curves and distances from within.

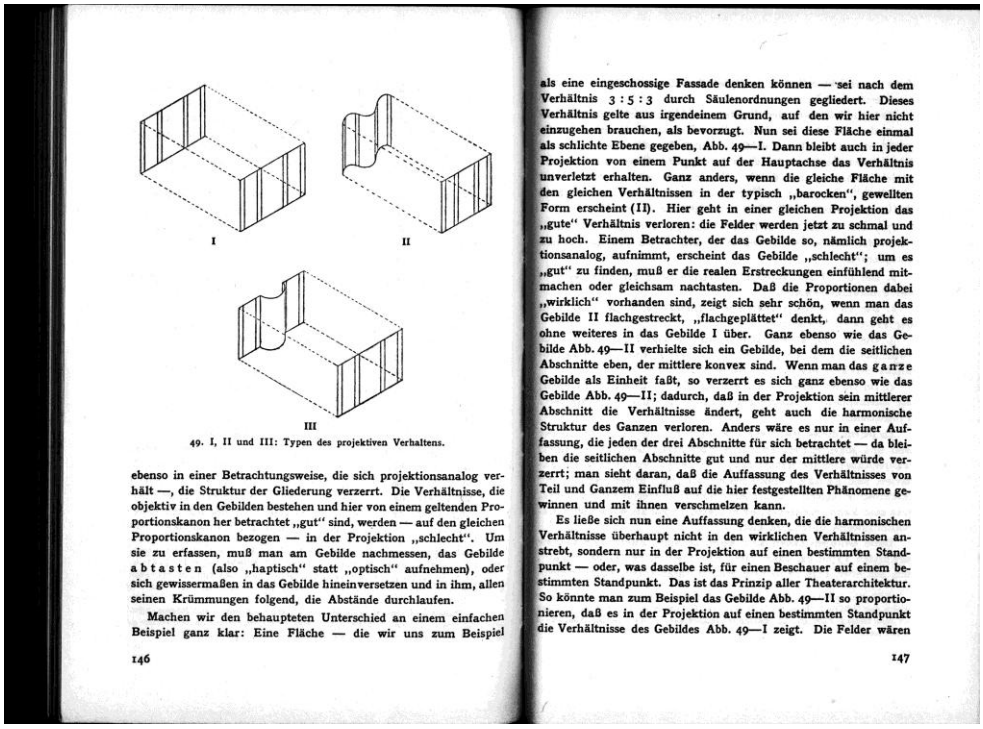
Allow us to use on example to clarify the difference as it is claimed. A surface which we imagine as a facade with a single story is articulated in the proportions 3:5:3 using the architectural orders. For a certain reason immaterial for us, this proportion is considered favourable. This surface can be rendered as simply flat [fig. 49-1]. No matter how this is projected, the proportions will remain intact from a point along the main axis. Things are very different if the same surface with the same proportions appears in the typically 'Baroque' wavy shape [fig. 49-2]. In the same projection, the 'good' proportion would be lost in this case – the fields become too narrow and too high. It would appear 'bad' to a viewer seeing it in this way, analogous to the projection. To experience it as 'good,' they will need to empathetically participate in or grope along its actual extension. If one imagines the image flattened [fig. 49-2] or pressed, then one can very well see that these proportions are actually present and it transforms easily into the first version [fig. 49-1]. An image in which the sides are flat and the centre convex would appear exactly as this [fig. 49-2]. If one imagines the entire image as a unit, then it will be distorted exactly as fig. 49-2; since the projection changes the relations of its central part, the harmonic structure of the whole is also lost. This could only be different in a projection which viewed each of the three parts independently – and the side parts

[90] Fiske Kimball, 'Luciano Laurana and the 'High Renaissance', *Art Bulletin*, 10, 2, December 1927, 125-152, has attempted to demonstrate that Alberti, Laurana and Francesco di Giorgio in many ways anticipate classical art.

[91] We are here employing the expression 'harmonic proportions' completely neutrally, even when disharmony arises and becomes a conscious goal.

[92] Since it is not relevant to the goals of the present study, I shall not discuss the reasons why the images of pure circles, circular cylinders, and spaces are treated in the same way as the surfaces.

would remain good and only the centre distorted. From this one can see that our conception of the relation of part to whole has an influence on the phenomena discussed here and can become enmeshed with it.



I II III

49. I, II und III: Typen des projektiven Verhaltens.

ebenso in einer Betrachtungsweise, die sich projektionsanalog verhält —, die Struktur der Gliederung verzerrt. Die Verhältnisse, die objektiv in den Gebilden bestehen und hier von einem geltenden Proportionskanon her betrachtet „gut" sind, werden — auf den gleichen Proportionskanon bezogen — in der Projektion „schlecht". Um sie zu erfassen, muß man am Gebilde nachmessen, das Gebilde abtasten (also „haptisch" statt „optisch" aufnehmen), oder sich gewissermaßen in das Gebilde hineinversetzen und in ihm, allen seinen Krümmungen folgend, die Abstände durchlaufen.

Machen wir den behaupteten Unterschied an einem einfachen Beispiel ganz klar: Eine Fläche — die wir uns zum Beispiel

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als eine eingeschossige Fassade denken können — sei nach dem Verhältnis 3 : 5 : 3 durch Säulenordnungen gegliedert. Dieses Verhältnis gelte aus irgendeinem Grund, auf den wir hier nicht einzugehen brauchen, als bevorzugt. Nun sei diese Fläche einmal als schlichte Ebene gegeben, Abb. 49—I. Dann bleibt auch in jeder Projektion von einem Punkt auf der Hauptachse das Verhältnis unverletzt erhalten. Ganz anders, wenn die gleiche Fläche mit den gleichen Verhältnissen in der typisch „barocken", gewellten Form erscheint (II). Hier geht in einer gleichen Projektion das „gute" Verhältnis verloren: die Felder werden jetzt zu schmal und zu hoch. Einem Betrachter, der das Gebilde so, nämlich projektionsanalog, aufnimmt, erscheint das Gebilde „schlecht"; um es „gut" zu finden, muß er die realen Erstreckungen einfühlend mitmachen oder gleichsam nachtasten. Daß die Proportionen dabei „wirklich" vorhanden sind, zeigt sich sehr schön, wenn man das Gebilde II flachgestreckt, „flachgeplättet" denkt, dann geht es ohne weiteres in das Gebilde I über. Ganz ebenso wie das Gebilde Abb. 49—II verhielte sich ein Gebilde, bei dem die seitlichen Abschnitte eben, der mittlere konvex sind. Wenn man das ganze Gebilde als Einheit faßt, so verzerrt es sich ganz ebenso wie das Gebilde Abb. 49—II; dadurch, daß in der Projektion sein mittlerer Abschnitt die Verhältnisse ändert, geht auch die harmonische Struktur des Ganzen verloren. Anders wäre es nur in einer Auffassung, die jeden der drei Abschnitte für sich betrachtet — da bleiben die seitlichen Abschnitte gut und nur der mittlere würde verzerrt; man sieht daran, daß die Auffassung des Verhältnisses von Teil und Ganzem Einfluß auf die hier festgestellten Phänomene gewinnen und mit ihnen verschmelzen kann.

Es ließe sich nun eine Auffassung denken, die die harmonischen Verhältnisse überhaupt nicht in den wirklichen Verhältnissen anstrebt, sondern nur in der Projektion auf einen bestimmten Standpunkt — oder, was dasselbe ist, für einen Beschauer auf einem bestimmten Standpunkt. Das ist das Prinzip aller Theaterarchitektur. So könnte man zum Beispiel das Gebilde Abb. 49—II so proportionieren, daß es in der Projektion auf einen bestimmten Standpunkt die Verhältnisse des Gebildes Abb. 49—I zeigt. Die Felder wären

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49. I. II and III: Types of the projective mode.

It is possible to imagine a conception which does not strive for the harmonic proportions within the real relationships, but only for a given vantage point in relation to the projection, or identically, for the viewer to stand at a certain spot. This is the principle of all architectural props within theatre decorations. One might lend the image of fig. 49-2 such proportions that it would turn into that of fig. 49-1 when viewed from a certain spot. In such a case, the fields would be too wide in the actual measurement on the object, but would appear to be 'properly' proportioned.[93]

One could finally also imagine the experiment of choosing relations in the actual object, which would change but remain 'good' when seen from a different vantage point. Such an image could then be perceived in two separate ways – analogous to the projection and by 'empathy', either 'optically' or 'haptically'. In the transition from one to the other, it would synthetically combine two separate perceptions. Cf. fig. 49-3.

72. In a necessarily cursory and inadequate way, we now present a sketch of four types corresponding to certain forms.

[93] Why would one choose the fig. 49-2 rather than immediately that of fig. 49-1? There might be completely other reasons – that fig. 49-2 generates effects of shadow not in fig. 49-1.

1. The harmonic structure present in the object is retained in the projection.
2. The harmonic structure present in the object is lost in the projection.
3. The harmonic structure present in the object is transformed into another harmonic structure when viewed from one or more given vantage points.
4. The object itself does not include any harmonic structure; the harmonic structure only exists in one (or more) projections.

Each of these three types can be identified among the extant works from the period we have delimited here. While the first three include great numbers of examples, entire images of the fourth type are extraordinarily rare in 'real' architecture (as opposed to theatrical props), and one might well ask whether this type even exists as an independent form.

These groups also have a significance in terms of time. To begin with, there were works of the first type, after which a few examples of the second began to emerge, and then from around 1630 mushroom into large numbers. Beginning around 1630, there were also the earliest images of the third type, which then came to predominate around 1690. At the end of the period then, images of the first type appear again to displace the others.

This division is not completely, yet it is strikingly concordant with the existing groups within 'classical' art (Renaissance), of the 'High Baroque' (from 1630) and the 'Late Baroque' – and easily dovetails with previous definitions. This has an advantage in that it lends a significance to the concepts which can no longer be transferred to other architecture, such as that of the medieval or ancient periods.

73. If this arrangement is accepted, then one arrives at a completely different conception of the High Baroque than that endorsed for instance by Riegl. As we see it, the High Baroque would be extraordinarily 'haptic' (in Riegl's terminology). This would also accord far better with the other characteristics of the High Baroque – its images are unusually forceful, almost aggressively corporeal, call for an experience with direct physical empathy and inner participation in their 'movement'. By contrast, the imagery of 'classical art' can be contemplated at a cool and dispassionate distance – very much as we have also observed. On the other hand, this allows a direct view of the 'harmonic proportions' which in the other mode of viewing must be experienced in the imagination (i.e. abstractly).

74. This conception also allows a far more definite index of which examples might be considered as predecessors of the 'High Baroque' conceptions. Typically for instance where convex forms are combined with flat forms, as had been the case in some of the imagery of Bramante and already Leonardo. This accords well with observations made in other fields – Max Dvořák has correctly observed tendencies in the painting of Leonardo which would later be called 'High Baroque', while Pinder has found other seeds of the 'High Baroque' existed in the trend of Bramante and Raphael. Typical 'High Baroque' forms, as we would consider the tabernacle of Bernini or Borromini's lantern of S. Ivo, were anticipated by Polidoro da Caravaggio; which is also true of observations one can make in the paintings by Polidoro (as Dr. Ludwig Münz kindly confirms).

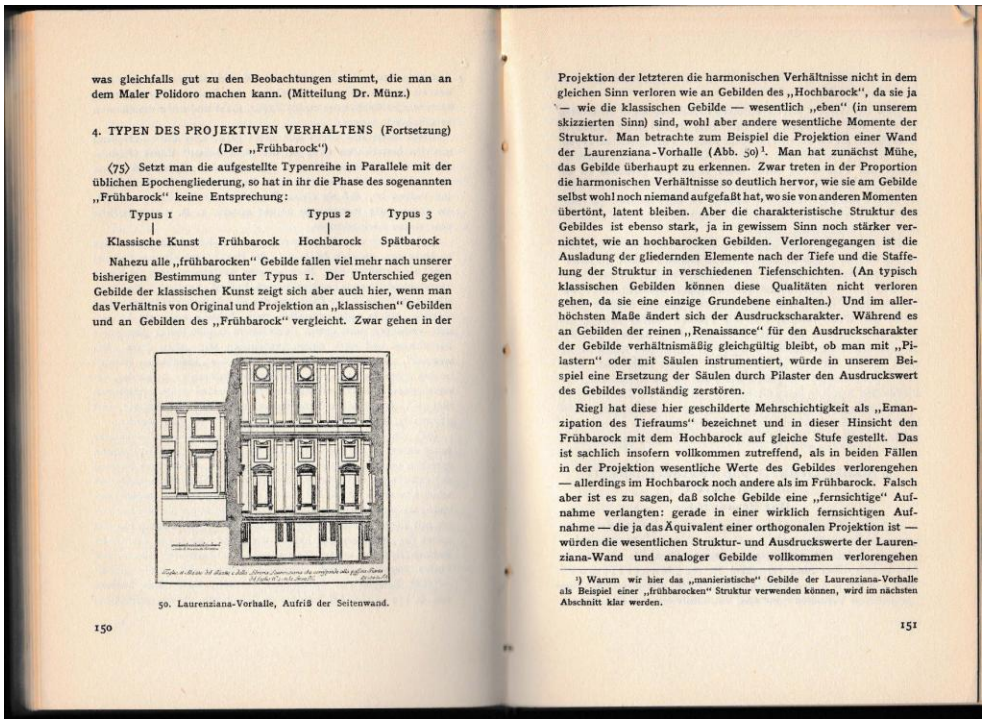
4. Types of the projective manner (continuation)
The 'Early Baroque'

75. If this sequence of types is placed in line with the customary rubrics of artistic periods, then the so-called 'Early Baroque' does not find a designation: 'Classical art' – type one, the 'Early Baroque' has no correspondent, the High Baroque – type two and the Late Baroque – type three.

Nearly all 'early Baroque' images would tend to belong to our type one. However, if one were to compare the relation of original and projection to examples of 'classical' imagery and that of the 'Early Baroque' then the differences to classical art would also become apparent. Harmonic relations are not lost to the same degree in the 'Early Baroque' as they are in the 'High Baroque' since they are essentially 'flat' like classical images (in the sense as we have delineated it) as well as including other essential aspects. As an example one might take a projection of the wall from the Laurenziana vestibule (fig. 50).[94] At first, it is difficult to even recognize the image. In its proportions, the harmonic relationships immediately become more apparent than they ever are to a viewer standing directly before it, where other aspects overwhelm and render them latent. Yet the characteristic structure of the image is as strong and in some sense more so than in High Baroque images. What is lost is the nosing of articulating elements into depth and the structure staggered into various levels of depth. (These qualities cannot be lost in typical classical images since they retain a single ground line). Its expressive character changes in the greatest possible way. While it remains relatively immaterial for the expressive character of purely 'Renaissance' images whether 'pilasters' or columns are used, in our case, columns in the place of the pilasters would completely upset the image.

Riegl described this multiplication of layers as an 'emancipation of depth', and in this regard placed the Early Baroque on the same plane as the High Baroque. Objectively, this is completely true insofar as both forfeit essential qualities in the process of projection – albeit other qualities in the High Baroque than in the Early Baroque. On the other hand it is mistaken to claim that these images demand to be viewed at a distance ('eine "fernsichtige" Aufnahme verlangten'). It is precisely when viewed at a distance – the equivalent of an orthogonal projection – that the essential structural and expressive values of the Laurenziana wall and related images are completely lost (and in that place a view at a distance is not even possible).

[94] In the following section it should become clear why we can take the 'Mannerist' structure of the Laurenziana Vestibule as an example of the 'Early Baroque'.



was gleichfalls gut zu den Beobachtungen stimmt, die man an dem Maler Polidoro machen kann. (Mitteilung Dr. Münz.)

4. TYPEN DES PROJEKTIVEN VERHALTENS (Fortsetzung)
(Der „Frühbarock")

⟨75⟩ Setzt man die aufgestellte Typenreihe in Parallele mit der üblichen Epochengliederung, so hat in ihr die Phase des sogenannten „Frühbarock" keine Entsprechung:

Typus 1		Typus 2	Typus 3
Klassische Kunst	Frühbarock	Hochbarock	Spätbarock

Nahezu alle „frühbarocken" Gebilde fallen viel mehr nach unserer bisherigen Bestimmung unter Typus 1. Der Unterschied gegen Gebilde der klassischen Kunst zeigt sich aber auch hier, wenn man das Verhältnis von Original und Projektion an „klassischen" Gebilden und an Gebilden des „Frühbarock" vergleicht. Zwar gehen in der

50. Laurenziana-Vorhalle, Aufriß der Seitenwand.

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Projektion der letzteren die harmonischen Verhältnisse nicht in dem gleichen Sinn verloren wie an Gebilden des „Hochbarock", da sie ja — wie die klassischen Gebilde — wesentlich „eben" (in unserem skizzierten Sinn) sind, wohl aber andere wesentliche Momente der Struktur. Man betrachte zum Beispiel die Projektion einer Wand der Laurenziana-Vorhalle (Abb. 50)[1]. Man hat zunächst Mühe, das Gebilde überhaupt zu erkennen. Zwar treten in der Proportion die harmonischen Verhältnisse so deutlich hervor, wie sie am Gebilde selbst wohl noch niemand aufgefaßt hat, wo sie von anderen Momenten übertönt, latent bleiben. Aber die charakteristische Struktur des Gebildes ist ebenso stark, ja in gewissem Sinn noch stärker vernichtet, wie an hochbarocken Gebilden. Verlorengegangen ist die Ausladung der gliedernden Elemente nach der Tiefe und die Staffelung der Struktur in verschiedenen Tiefenschichten. (An typisch klassischen Gebilden können diese Qualitäten nicht verloren gehen, da sie eine einzige Grundebene einhalten.) Und im allerhöchsten Maße ändert sich der Ausdruckscharakter. Während es an Gebilden der reinen „Renaissance" für den Ausdruckscharakter der Gebilde verhältnismäßig gleichgültig bleibt, ob man mit „Pilastern" oder mit Säulen instrumentiert, würde in unserem Beispiel eine Ersetzung der Säulen durch Pilaster den Ausdruckswert des Gebildes vollständig zerstören.

Riegl hat diese hier geschilderte Mehrschichtigkeit als „Emanzipation des Tiefraums" bezeichnet und in dieser Hinsicht den Frühbarock mit dem Hochbarock auf gleiche Stufe gestellt. Das ist sachlich insofern vollkommen zutreffend, als in beiden Fällen in der Projektion wesentliche Werte des Gebildes verlorengehen — allerdings im Hochbarock noch andere als im Frühbarock. Falsch aber ist es zu sagen, daß solche Gebilde eine „fernsichtige" Aufnahme verlangten: gerade in einer wirklich fernsichtigen Aufnahme — die ja das Äquivalent einer orthogonalen Projektion ist — würden die wesentlichen Struktur- und Ausdruckswerte der Laurenziana-Wand und analoger Gebilde vollkommen verlorengehen

[1]) Warum wir hier das „manieristische" Gebilde der Laurenziana-Vorhalle als Beispiel einer „frühbarocken" Struktur verwenden können, wird im nächsten Abschnitt klar werden.

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50. Laurenziana entrance hall, elevation of the southern wall.

76. The shift from structures in one surface to those with multiple levels occurred (and can occur) in far more gliding transitions than the steps between the types discussed above. This can help to understand why the border between classical art and Early Baroque has remained more controversial than that between the Early- and the High Baroque, which nearly all scholars have placed in 1630 for Italy. Objectively, it would be far from correct to draw as sharp a line there as between the two phases verified above.

By contrast then, the High Baroque returned to the structures of a single surface – though curved and not flat. If one were to 'press' its typical imagery, then forms would emerge which in their basic structure are far closer to the art of classicism than to the Early Baroque. Riegl also recognized this very acutely: 'The relief of the wall is flatter, but the surfaces more strongly in motion and curved'. A typical aspect is the renewed preference for pilasters. It has after all been observed in painting as well that the High Baroque in some sense returned closer to classical art. Yet this similarity is of another order than the restoration of classical art in the 1580's.

Aside from this, there are then trends in the 17th century synthetically combining structures with numerous surfaces with the structural type 2 (or 3). It is not necessary to further belabour this.

5. Unity and division of structure (Mannerism)

77. 'Mannerism' is a phenomenon of a completely different kind than the members of the sequence: classical art – Early baroque – High Baroque – Late Baroque (using the traditional names, but in our own sense). According to the characteristics we have been examining most closely, the 'projective attitude' and the relation of the parts to the whole, it definitely belongs to the Early Baroque type. This accords very well with the fact that it was previously not distinguished, and that no incisively 'Mannerist' work of art has been found beyond the accepted limits of the Early Baroque – before 1520 or after 1630. If its structures are observed from this point of view, then Mannerism is simply Early Baroque.

It distinguishes itself from this very starkly in another way – according to its structural principle it is dualist. In other words, it is based on an open opposition among the various parts and levels within its images; dissonances are accepted and sought out; it is characterized by an inner division, a tension between the various spheres – and elevated to the status of a principle. This refers to the same thing which Annie Popp has demonstrated in the difference between Michelangelo's works of the 1520's and the 1530's and might be identical with what Allesch has called 'the intention of duality'.[95]

78. There are profound distinctions within this principle. The conflict is conceived as necessary and unresolvable – this is the 'tragic' architecture of Michelangelo which became the source for the main stream of this development. Or else, the tension between the spheres is savoured on a purely aesthetic level – the artistic and decorative Mannerism of the later period. This distinction reveals itself particularly in the 'expressive character' of the images – one might compare the earliest Mannerist works of Michelangelo to that of a Buontalenti.

79. Aside from this, there is still the greatest variety of possibilities, depending on the location of this principle of duality among the levels or elements of the image. To mention only one, the opposition might be between the grand and the small form, between the wall and its articulation, among the relative size of the details (works with more than one scale of size: Vignola), or between architecture and the sculpture related to it.[96] The latter became a peculiar formal manner of Mannerist architecture from the Sagrestia nuova for instance to the Zeughaus by Elias Holl. Nearly all of these possibilities had collectively already been realized by Michelangelo and then later appeared in increasingly isolated ways.

80. The full significance and uniqueness of this phenomenon becomes clear if one considers that the entire period from classical art to the Late Baroque was otherwise monist and dominated by an intention of unification. There is a single

[95] Gustav Johannes von Allesch, 'Über künstlerischen Wert', *Psychologische Forschung*, 4, 1, 1923, 23-32.

[96] Various scales are also a symptom of Mannerism in painting, as with Jacopo Pontormo.

exception to this – the Rococo. Just as Mannerism provided an aberration from the Early Baroque, so is the Rococo a subspecies of the Late Baroque, if one concentrates exclusively on the relation of the part to the whole the projective character and the historical composition. While the Late Baroque presents a positive synthesis of two formal manners which it firmly believes possible to merge, the Rococo variously plays these components against one another in order to aesthetically relish their contradictions. This is the source for its so-called 'scepticism' and 'frivolity' which expresses itself in its formal principle. This explains how the Rococo in some ways returned to 16th century aestheticizing Mannerism.[97]

81. In some sense, our determinations about Mannerism confirm the idea that the core of Mannerism lay in the school (the followers) of Michelangelo. Aside from this, it is possible to distinguish a trend beginning with Perruzzi and climaxing in Vignola. The irresolvable ('tragic') conflict was the unique deed of Michelangelo – not as the private world view of the one originating it or as the intellectual subject of the literary side of visual art, but rather as a creative formal principle. An architecture which is 'tragic' in this strict sense has never emerged since. Recent architects have all been optimists while they were building. The further history of Mannerism was that of reinterpretations of this principle and a 'division of the inheritance'. When the 'High Baroque' arrived, Mannerism died out and its individual forms survived in the now essentially 'unified' works. A theory of this period must necessary address the question as to why the dualist conception ended with the High Baroque.

6. The single work of art as individual or part of a 'system'

82. To characterize the historical 'place' of Borromini, we introduce another dimension of distinctions, as follows:

Within the overall period there was a conception of architectural commissions (or an interrelated group of such conceptions) according to which each building was unique and each individual work a small world unto itself – sui generis. This is typical of Mannerism for instance. For this reason, the common aspect of all Mannerist architecture is not so obviously apparent. Each of them was given form as something unique, individual, singular and not repeatable. Mannerism had no system and no classes – it calls for originality. This accounts for the great number of innovations without a later effect and for the lack of continuity. This is the reason for the uneven level of quality – declines are possible as they would occur within the more fixed parameters of a unified system.

By contrast, classical art has a marked tendency toward forming a 'system'. Within this conception of things, the individual architectural commission has no properties which might not be repeatable, but constitutes a particular application. For this reason, the architectural functions can be organized according to certain

[97] Hans Sedlmayr, *Österreichische Barockarchitektur*, Augsburg: Filser, 1930.

classes and represented by certain types which might be malleable in themselves and even conceivably distinct, but never unique. For example, the 'città ideale' of classical architecture, as shown in the well known paintings by Francesco di Giorgio or Laurana, is essentially a closed system of classes of forms available for 'application' in a given particular case. During the Baroque, there were also such ideal designs which provided for all possible functions so that when the images were actually built they would harmonize as a unity.

It remains an open question as to whether this exhausts the existing differences of conception. There are certainly more reined subtypes within these main groups. Yet it appears impossible even to imagine an ideal interpenetration among these notions, while it did indeed occur in reality (I am thinking here of Fischer von Erlach).

Contrary to what one might initially imagine, it emerges that this difference cannot possibly have any correlation to the distinction we have earlier observed (intentional unity and intention dualism of structure). Outside of Mannerism there is also a 'singularizing' conception of individual works of architecture – with Bernini for example.[98]

7. 'Natural' and 'unnatural' architecture

83. All aesthetic experiences of body and space available through architecture are principally different from our 'normal' quotidian experiences of the same category. Architectural space, conceived aesthetically is for instance never identical with the real space in which we perform our actions or which silently surrounds us. By contrast to this, the aesthetic experiences of architectural form and space offer a reality of another kind. Once this very natural thesis is admitted, there are also distinctions among these para-real aesthetic architectural 'spaces', depending on how their qualities relate to those of the quotidian, normal sphere. For example, there are a number of specific architectural experiences of the aesthetic realm which retain essentially characteristics of normal spatial experience – they elevate, organize, transfigure, heroize or dematerialize them, without providing a contradiction of everyday experience. By contrast to this, there is another quite varied group which involves experiences of a kind not available to normal life. Architecture of this sort creates concretely new dimensions of experience – combinations of body and space almost as obviously contradictory to the characteristics of anything we experience in our lives as certain images from dreams.

In the region of our current questions, the first of these groups typically includes nearly all French architecture of this period – it is 'naturalistic'. Typical examples o experiences of the second sort are the perspectivist tombs by Borromini

[98] Such a conception of architecture can cause particular difficulty of individual attributions.

in S. Giovanni in Laterano. Such a 'transition of the functional qualities of the dimensions onto one another' (Hempel) does not occur 'in nature'.

From a survey of all historical architecture it appears that 'unnatural forms' are far more seldom here than in painting. Considering that unlike pictorial space and form, those architectonic spaces and bodies which we are used to seeing as 'real' because of their biological significance, do correspond to one another, then one can understand how much more difficult it is in this field to completely uncouple oneself from the 'normal' aspect.

Since the point here is to define the place of Borromini's art, we cannot dwell on any of the more refined distinctions among these classes. This antithesis is provisional and still far too crude to be of any further use.

The section which it creates, leads diagonally through all of the others.

8. The historical place of Borromini's architecture

84. The coordinates introduced here are sufficient to anticipate the place of Borromini's art by way of an initial iteration.

1. First of all: at its core, the architecture of Borromini has no deep relationship to Mannerist architecture. In the architecture of Borromini, where all parts and levels are formed according to unified principles, there is no place for the 'intention of duality' – which had created an artistic principle here. This shall become clearer when we derive the individual formal details in a second, later approach to the material. Borromini made use of numerous details taken from Mannerism (particularly from Michelangelo); yet the manner in which he adapted them and combined them with the grand form has nothing in common with Mannerism.

It has been necessary to emphasize this. First of all because Borromini defended his art by conjuring the name of Michelangelo; yet this apology does not appeal to the unique character of his treatment of form, but rather in justifying the creation of unprecedented forms in general – much more of a 'social' fact. Second of all to avoid confusing a second type of duality, the typical schizothyme rupture running through his life and work, with that 'duality of intention' which is an artistic structural principle. And third, this 'intention of duality' also may not be confused with the fact that Borromini also introduced another duality into his work by dividing architectural commissions into two distinct overall classes, 'functional buildings' and 'free forms'. (This distinction made it possible for him to realize certain ideals of his architectural program). If one imagines an 'oeuvre' to present itself as something like a closed block, then there appears to be a 'Mannerist' fissure running through his individual works' yet this is only a superficial similarity, for at a deeper level, things are very different.

Particularly in his earliest period Borromini preferred to work with Mannerist motifs; above all, he can be demonstrated to have studied Vignola in detail, and then Michelangelo, della Duca etc. This cannot be interpreted to mean that at his beginnings Borromini was still bearing a legacy of Mannerism, but he was

rather actively looking backward beyond the immediately preceding period of Maderna and the 'classical' Renaissance of the 1580's.

85. 2. Beside Bernini and Pietro da Cortona, Borromini was one of the founders of the 'High Baroque'. What this means can be seen from our definition of this phenomenon. In a certain sense, his significance goes beyond that of the two others since he developed a homogenous 'system' of form-classes to realize this conception of the architectural problems. This is the reason that his influence is far more 'contained', while the effect of Bernini and Pietro da Cortona frittered along individual threads. Hempel has not sufficiently indicated how powerful this influence was – the architecture of Borromini is directly constitutive for the widest streams of the following period, especially for the German Late Baroque and, in a very different way, for the Rococo.[99]

There is another special reason for this particular favour shown to Borromini by the Late Baroque – the expressive 'lightness' of his imagery. With him of course, this was related to the goal of a 'flexible' structure: the malleability could not have succeeded in buildings appearing too much like heavy masses – somewhat like the colonnades by Bernini. In the Late Baroque, when a theoretically extreme optical and distant-viewed aspect was combined with one of close viewing sculptural qualities (see section 72 above), the same notion of 'lightness' became a condition for the success of an element of experience. This was because there is no apprehension of purely surface-bound values if the building has the effect of a heavy form.

86. 3. Within the 'High Baroque,' Borromini belongs to that particular branch which preserved the quality of the 'single-surface' (cf. above). Across the 'Early Baroque', this binds him to the classical art. If they are flattened, his images turn into images of classical art, or at least become similar to them. For instance, the small 'Bramantesque' court by S. Carlino and a number of other works can be understood in this way – generally what Frey has mistakenly called the 'classicism' of Borromini. In truth, this phenomenon is a result of the fact that 'classical art' is latent in the works of Borromini. This relationship was further strengthened when Borromini created a 'system' at the beginning of the 17th century, equivalent to that of classical art, again casting light on his important place a founder of the 'High Baroque' – one in which all forms and spaces were composed from fundamentally equivalent relief-like units. The art of Borromini is the 'High Baroque' counterpart to the classical art. Similar things can after all be observed in other fields at the beginning of the 17th century.

Only in some of his last works is there a transition from the 'single surface' to the 'multi-surfaced' High Baroque.

4. Since his art is an art based in relief, Borromini still hails from the entire earlier architecture of the 16th century: in this point, the classical art and that of the Early Baroque do not undercut one another. In this sense he stands at the end of a tradition, as the last one to embody this conception gloriously. On the other hand,

[99] Cf. Hans Sedlmayr, *Österreichische Barockarchitektur*, Augsburg: Filser 1930.

the work of Guarino Guarini reveals the equally grand emergence of a late antique conception which sees the sequences of spaces as the primary element, and leads to a 'ricorso' ultimately dissolving the constitutive function of the architectural orders – something which we cannot further discuss here.

87. 5. Finally, in individual works such as the perspective niches in S. Giovanni (in our sections 29-30 above), Borromini approached a conception which in a different version became a fundamental principle of the 'Late Baroque,' especially in Germany.[100]

88. Borromini, the 'revolutionary', did not make a break with the historical situation he found, but used it as a point of departure. The grand forms which he filled with his new conception of structure were not original with him but already existed – Borromini found all of these types of facades, churches, secular spaces, towers, doors, windows, altars already extant and only generated and reconstituted them in a new way.

As an inventor of new grand forms, Borromini is not even creative, but decidedly conservative – he did not create a new form of centralized church space, palace, garden house, or abbey etc., as others did. What is revolutionary is only his conception of structure. Since he recognizes the traditional forms in order to revolutionize them from the inside out, these units which he then rebuilds, can only be units potentially contained in these traditional forms. They can only diverge very slightly in their proportions.

89. Theoretically, one might pose the question as to whether the idea of Borrominesque architecture could also be realized with another set of forms, such as those of the Gothic. One must say no. A 'Baroque Gothic' is imaginable and does occur, but only because the Gothic includes a disguised and unconstrued articulation based on the ancient orders and which might itself be conceived as an 'order'. (It is characteristic that Guarini refers to a 'Gothic order' in his tract on architecture and discusses its modules. For him, the Gothic piers are a more slender order, but ultimately the same kind as the Ionian, Doric and Corinthian – a very un-Gothic conception).

On the other hand relief units and self-enclosed wall-bays do not occur even potentially in Gothic architecture. Since these are a conditio sine qua non of all Borrominesque architecture (in the narrower sense) it is inconceivable that their idea could be realized using Gothic forms. Similarities could only arise in the more peripheral levels, such as the form of the profiles or the like. The fact that they also only apparently exist here, is another thing to be demonstrated in the second round of study.

90. The architecture of Borromini is extremely 'unnaturalistic'. This is already inherent in the concept of a 'movable' architecture.

[100] Cf. Hans Sedlmayr, *Österreichische Barockarchitektur*, Augsburg: Filser 1930.

In his architectural work, Borromini created a blur of the spatial dimensions and their formal values going far beyond what had otherwise come to be expected in the 'Baroque' and to this degree, only finds an analogy in most recent painting.

AFTERWORD

It strikes me that the most reliable indication as to whether one has succeeded in penetrating the 'spirit' of a language reveals itself in the capacity to produce meaningful new forms within this language. I would also consider proof of felicitous ingression into an artistic mode of form to be the potential to produce forms according to the same mode. I might mention in this connection that I have been able to 'invent' Borrominesque images (large forms) and that I have then later discovered them among the drawings of Borromini. (This bears no relation to the quality of these products; there is no question of achievement, but only of the proper inclination). If this is true, then we have not only discovered a new and objective verification of a successful 'insight', but this would also place the activity of attributions on a new level. This is the reason that provisionally, I have intentionally omitted any problems of attribution.

This attempt might succeed without its successful agent being conscious of it. For the work of scholarship, the task would remain to conceptually analyze the constitutive aspects of this process, and to conceptually reconstruct the whole. I should mention that I have not proceeded with a process of 'divination' into the spirit of Borrominesque forms, but have been analytical from the start. At the beginning, I had no idea that I would have arrived at this determination of Borromini's architecture (as one operating with relief units). There was nothing in the existing bibliography to point in this direction, and I only continued against my own will. When I had discovered the authorship I still did not realize that it would place me in a position to produce in the manner of Borromini.

This might allow us to understand why the goals of the earlier studies of art can no longer suffice.

I hope that this attempt to grasp the architecture of Borromini in concrete terms might to some degree also lend an otherwise missing substance to my study of German and Austrian Baroque.

PREFACE AND INTRODUCTORY ESSAY FROM THE 1939 EDITION

Preface to the new Edition

The new edition of the 'Architecture of Borromini' owes its origin to a suggestion from my first publisher Mr. Reinhard Piper. He has made it possible to add a new introduction to the book and precede it with the 'New Essay on Borromini'.
The names of the great architects are easily forgotten. Compared to ten names of famous painters it is barely possible name one architect who conjures a clear image. Many people can name a dozen painters from the great 17th century without any difficulty and make associations: Rubens, Rembrandt, Velazquez, Poussin, van Dyck, Hals, Vermeer, Ruysdael, van Goyen, Caravaggio, Murillo. But architects? Possibly Bernini. Perrault, Levau, Holl or Post are barely known outside of the field, even by 'educated' people. Although he is the greatest name of this century beside Bernini and provided the impetus for the profound change in architecture, Borromini was for a long time completely forgotten. His work was among the essential conditions for the efflorescence of the German baroque whose great masters from Fischer von Erlach, Hildebrandt, Prandauer and Steindl to Pöppelmann , Neumann and Schlaun might all be called his students in various ways. This will continue to be reason enough to continue studying the work of Borromini for which Max Dvořák provided the basis a generation ago in his famous essay 'Borromini as Restorer' (included in Max Dvořák, *Gesammelte Aufsätze zur Kunstgeschichte*, Munich: Piper, 1929, pp. 271-278).

Hans Sedlmayr, Vienna 1939

New Essay on Borromini

I.

The fundamental paradox of every art historical study is that the timeless quality – its artistic perfection – is achieved on the basis of, and with temporal materials and temporal forces, which undergo changes through time. For this reason, there are two types of art historical study even preceding the other distinctions. The first of these stresses the artistic aspect of the art work, and up to this point has most frequently appeared in the form of absolute aesthetics in the context of surveys of the history of art. The other emphasizes the historical phenomenon, the changing 'style'. A combination of the two has only rarely been achieved, and this in spite of the fact that this constitutes the fundamental purpose of art historical study. This is an endeavour which has been particularly dear to German scholarship.

Recently, the approach from the history of style has been so predominant that it has become incomparably easier to determine the significance of an artist

such as Borromini, who was only just discovered in this time, for the emergence and 'development' of Italian and European Baroque, than it is to identify the actually artistic aspect of his achievement. Only when the two are combined would they provide the full realization of his art historical significance.

It is a relatively simple matter to characterize the specific art historical position of Borromini among the other masters of the Italian High Baroque. Alois Riegl has reached beyond the brilliant insights of Heinrich Wölfflin and provided us with a profound definition of the Baroque, and with it the means to determine the place of Borromini's art. Riegl saw the essential innovation of the new style as an 'emancipation', or as one might put it more simply, by the 'inclusion of spatial depth', namely its integration within the architectural mass, the enveloping parts of which begin to include it in various ways. This definition will soon be explained on the basis of examples, is convenient to clarify an abundant number of individual traits which when taken together yield a picture of the unique character of High Baroque works. Either consciously or not, this problem of the inclusion of spatial depth became the guiding task for the generation around 1600. In one way or another, each of the greatest masters of the Roman High Baroque took a stand in the matter.

The new stylistic principle can be registered most clearly on the few epoch making church facade types. We can almost count them on the fingers of one hand. In comparing these facades to one another one can recognize the common High Baroque characteristics within the peculiar manners of each individual master.

What is common to the five facades, here being compared for by way of allusion than analysis, is that they all envelop or interpenetrate the facade with spatial depth. Martino Lunghi the Younger in his facade of the church of SS. Vincenzo ed Anastasio (ca. 1650) and Carlo Rainaldi in that of S. Maria in Campitelli (begun around 1660) hold firm to the basic surface of the facade as this had been done in the 16th and early 17th century. Lunghi became the first to implement such a facade type with the use of free standing columns rather than applied columns and pilasters. He creates what is no more than a shallow layer of space between the orders and the wall, which recalls a flattened Hellenistic columnar portico when seen at a distance with a shifting impression of its overall character. The free-standing columns are surrounded by light and air. With a series of protruding and inset columns of various sizes united by gables and beams into separate compartments, Rainaldi creates a uniquely 'hard' evocative system of flat volumetric cubes, which has a compelling relation to the very original system in the interior – a principle which also recalls antiquity: the aedicule facades of Late-Hellenistic Roman art of the 2nd century AD.

The next two facades make a far greater break with tradition – the front of S. Maria della Pace by Pietro da Cortona (begun in 1656 and completed in 1658), and the great facade of S. Andrea al Quirinale (begun in 1658), developed by Bernini on the basis of an early design for S. Maria della Pace. In S. Andrea, one can easily read the new principle with marvellous clarity. The actual facade – more of a large wall

with a door – is kept within the surface but is combined with a concave element which has the effect of surrounding the core of the facade with space in the manner of an open coat, and then also with a convex element introducing a small self enclosed space like a small temple cut in half before the facade. The actual 'facade' maintains the centre between these two opposing elements. With these very simple and classically clear structures ('Gebilde'), the viewer experiences the interplay of the three fundamental dimensions of the volumes in depth – concave, convex and flat. (I cannot help but remark how typically Italian the idea is of so clearly aligning the basic views; a great example of this tendency can be seen in the Giorgione painting in Vienna with the three views of the human face in frontal, profile and three-quarter profile; standing, seated, pacing; as a youth, grown and in age. Baroque painting also liked to allow the three basic colours of red, blue and yellow to overtly emerge.)

After having recognized the classical manner in which spatial depth has been introduced into the facade of S. Andrea, it is no longer difficult to see that this new tenet was first expressed at S. Maria della Pace. If one were to remove the concave and convex shells, then the flat central part would appear as a facade in five parts with wings extended much in the way of Vignola on the facade of S. Maria dell'Orto and Della Porta on the facade of the Annunziata in Genoa. Just as at S. Andrea, the centre is shrouded by the bulging convex form of its bisected tempietto, and differently, although similar, enclosed by a concave rear wall extending as far as the wings. Here again, as at S. Andrea, but more variegated and intentionally looser, this merging of concave, convex and flat elements produces an unprecedented richness of spatial relations and a completely novel experience of depth. One is correct in not using the term facade for this. Scenic values have won the upper hand over the purely architectonic, and while the concave rear wall provides a rounded horizon, the whole presents an architectural diorama, a 'panorama' united around a sculptural 'core'.[101]

Borromini's facade of S. Carlo alle Quattro Fontane differs from both of the groups into which these four facades divide themselves. The same ideas behind this facade which was under construction beginning in 1662 (the work of a 65-year old, comparable to the late work of Rembrandt) had already been recorded in designs made in the 1630's. This facade no longer includes a firm ground line. In this case, the concave and the convex no longer provide an expensive enrichment for a flat facade which might stand alone, but have instead been subsumed into the facade. The lower level curves in a concave-convex-concave wave, while the upper level has a concave centre as well – the transition illustrated in the cone of the sentry-box window - with no intervening quiet spot. Its movement is not set before an ideal ground or around such a thing, but rather within it – this ground is itself consumed

[101] The theatrical aspect of this sort of architecture has been particularly well emphasized by Richard Hamann, *Geschichte der Kunst* [Berlin: Knaur, 1933], in his chapter 'Hochbarock in Italien', pp. 638-659.

by the motion. Its movement expands into depth and develops it in a completely unprecedented way.

This single example already demonstrates the unique manner of Borromini in relation to the other masters of the High Baroque. His facade brings the extremes together without mediating between them. By the impenetrable enclosure of its reliefs and the columns planted firmly in the wall, this facade is the most typically Roman of the entire group. If one were to 'flatten it out', then it would it would impress us as the most conservative in terms of its relief. At the same though, it is also the most revolutionary, and its method of expanding into space is not achieved by an addition of elements, but rather by a dynamic process within the facade, gives it the most 'northerly' character (the meaning of which we shall clarify further on). Pietro da Cortona's facade of SS. Martino e Luca could be seen as distantly related. There too, the wall relief is firmly enclosed, there too, the facade is set into motion by apparently invisible forces, forward at the centre while the framing pilasters are retained to at least recall the ideal ground plane on which the image is based, while the inclusion of depth is only just intimated. In the facade of S. Maria della Pace, which includes a true compendium of High Baroque ideas, this possibility is expressed in the upper level of the centre as one among others.

What we have observed about the spatial values could be extended to other qualities. To mention one of these which has not received much attention – while the facades by Pietro da Cortona and Bernini are composed from parts with completely different material character, that of Borromini gives the appearance of having been made from one single basic material. One might study how this relates to the characteristics we have been considering. Its composition is no less distinctive. There was a loose and not calculable compilation of coulisses in Pietro da Cortona, an energetic subordination to a dominant motif in Bernini, and a balanced mirroring of the two levels in Borromini. The same can be said of their sense of proportions. Allow us to mention only one other detail which illustrates how Borromini remained remote from the others. All of the facades we have mentioned culminate at the centre with a flat sided gable which might protrude as in the example by Rainaldi, but is not broken. Borromini alone had a remarkable flame-like volute flickering freely above the concave beam.

A more thorough consideration of this single work could provide an introduction to the unique qualities of Borromini's High Baroque. One must not forget that a facade meant incomparably more to the architects of the Renaissance and Baroque than it would in our time. The form of the facade provided a central theme for Baroque architecture, equally important to the form of the interior space, yet its relevance was not the same to every High Baroque architect.

If this indicates the character of the stilo borrominesco, then his historical significance can be made apparent by considering the chronological relation of these five facades – Borromini (born 1599), Pietro da Cortona (1596), Bernini (1598) all belonged to the same generation, while Lunghi (1605) and Rainaldi (1611) were slightly younger. While these facades from the latter four were all designed between

1650 and 1660, the fundamental aspects of Borromini's innovations had already been made before 1635 – fifteen to twenty-five years earlier. This throws a sharp light on the revolutionary character of his work. Again, it is only the facade of SS. Martino e Luca by Pietro da Cortona (1634) which kept up the pace while remaining far more strongly indebted to tradition.

II.

The earliest influences from the art of Borromini can already be observed among his peers and contemporaries as early as in the later 1620's. It is now becoming ever clearer to us that in spite of his subordinate appointment in the work at St. Peter's, Borromini already exercised an influence on the coeval but early established yet unbiased Bernini which should not be underestimated. It was his idea to give the beam of the famous tabernacle a concave indentation and introduce a tension which had been absent, and possibly also the thought of the tense curve in the crowning volutes. Bernini followed this as impartially as did later Cortona. As long as Borromini was living, and even during their later rivalry, this influence could be felt in the work of Bernini. The Scala Regia as designed by Bernini would be as inconceivable without the example of Borromini's Spada colonnade as his design for the east facade of the Louvre without the Borromini facades the surface movement of which he translated into a greater corporeality.[102] In the very Baroque facade designs by Rainaldi for S. Maria in Campitelli, ideas from Borromini are mixed with others from Pietro da Cortona, as again later in the facade of San Marcello (1682).[103] Only the influence of Pietro da Cortona on his contemporaries is comparable or even surpassed that of Borromini.

The strongest influence of Borromini did not take place in Rome. In Rome, his followers were always seen as a sect, the 'setta borrominesca'. His actual follower in Italy was the Modenese Guarino Guarini who was a full generation younger and employed as engineer since 1668 in the service of the Duke Charles Emmanuel II of Savoy, dying in 1683, one year later than Bernini. In his work, the art of Borromini underwent a change. This shift can again be suggested by comparing two facades. Borromini used the wavy bay as an independent laminar motif. When it reappears in the church designs by Guarini, the wave provides the exterior form of a combination of three spatial cells lying behind the facade, generating and motivating their shape. In the work of Guarini, these spatial cells constitute the primary factor. The style of Borromini was also moved into the sphere of a geometrical speculation, the motifs were heaped together; the visual character

[102] Cf. Ragnar Josephson, 'Les maquettes du Bernin pour le Louvre,' *Gazette des Beaux-Arts*, 5, 17, 70, 784, February, 1928, 77-92, reproduction 79 and the ground plan in Heinrich Brauer and Rudolf Wittkower, *Die Zeichnungen des Gianlorenzo Bernini*, Römische Forschungen der Bibliotheca Hertziana, 9-10, Berlin: Keller, 1931, 175.

[103] Cf. Rudolf Wittkower, 'Carlo Rainaldi and the Roman Architecture of the Full Baroque', *Art Bulletin,* 19, 2, June 1937, 242-313, fig. 50 and 51.

was changed to such a point that it has even been possible to refer to architectural deliria. The historical significance of Guarini lies in the fact that beginning with his work, there were two strands of the Borromini stream, fundamentally reinterpreting the Borrominesque in a spatial manner for broad districts of the late Baroque – in the Savoy with Vittone, in Spain with Bonavia, in Germany with Dientzenhofer and Neumann.

The profoundest effect of the innovations from Borromini was that they became an element in the synthesis characterizing German Late Baroque, and that thus transformed and revived, these were among the most significant of German and even European art. It was less the typical forms of his art, but more his ideas which continued to exercise influence, although the famous profiles designed by Prandauer would be inconceivable without a previous study of the individual forms in the work of Borromini. This is understandable since the 'dynamic' streak in Borromini was related to a traditional tendency in German art which asserted itself repeatedly through the centuries. An enumeration of individual effects could never do justice to the significance of Borromini's art (or later that of Guarini) for the German Baroque. The German followers never made so strict a distinction between Bernini and Borromini as did the Romans. They borrowed the 'Borrominesque' motifs from Bernini and particularly from Pietro da Cortona and unselfconsciously mixed them together as well as with French sources.

That is not the end of Borromini's significance for the history of style. His small scale decorative forms had an influence on the French Rococo similar to that of his sculptural conception for the German Baroque. This was already recognized at the time. Yet the manner in which the art of Borromini was transformed and survived in the Rococo has not yet been studied in any detail.

Around 1725, his art can be said to have reached the zenith of its influence in all of Europe. This was the time in the German speaking areas that the marvellous altarpieces by Matthias Steindl in Zwettl and Dürnstein were being made, as well as the mature work of Kilian Ignaz Dientzenhofer, with the young Schlaun studying the work of Borromini in Rome and the design by Meissonnier for the church of St. Sulpice was published in France. It is no coincidence that the engraved work from the estate of Borromini was published in Rome in 1725 by Sebastiano Giannini with the title '*Opus architectonicum Francisci Borromini*'.

To discover the roots of the personal style of Borromini is more difficult than tracing his influence. There is no such thing as a predecessor or point of departure as he himself provided it for Guarini. There has been a forsaken search for 'missing links' between him and the art of the 16th century. The actual source for his art probably lies in the individual forms within the work of Michelangelo (although not his architecture generally), and then also the 'Baroque' aspect available in the study of antiquity, as there have been attempts to deny, which he might have been led to know from the engravings of his broader compatriot Montano. For a 17th century architect such as Borromini, it must have been very important to have found models for his own ideas in antiquity itself since this provided such a paradigm for the

orthodox. Recent research therefore confirms and further clarifies what Borromini himself once said, that his teachers had been Michelangelo, antiquity and nature.

III.

Then we have the question of the artistic achievement as opposed to the artistic significance of Borromini. One should not speak of questions of value, since that would open the gates to the absolute aesthetics which have been correctly eliminated from historical study. This question does not address problems of value, but rather those of rank or priority, which are far less elusive to scholarly clarification than is often supposed. Of course there will be differences of opinion and fluctuations in judging the artistic rank of an art work, yet the determination of style was and continues to be subject to the same variations. It is essential in gaining a deeper understanding of a work of art – of its intrinsic structure and its 'regularity' - to concomitantly arrive at a more consistent opinion as to its rank. Among connoisseurs of the art of Borromini it would probably not be very difficult at all to achieve unanimity as to which of his individual works are of the highest order. They would end up being those which have always been distinguished by judges using a great variety of measures. I am stuck that the majority of such judges place Borromini in the history of architecture on the basis of four works – the construction of San Carlino, the crossing and belfry of S. Andrea delle fratte, the facade of the Propaganda Fide, and the Roman university church, S. Ivo. A stylistic judgment of S. Carlino is hampered by the fact that it was made in two separate phases in the career of Borromini, yet this does little to curtail the acknowledgement of its place. The belfry of S. Andrea, of which only one level survives, and this only skeletally, must be judged according to the preserved drawings; in standing before the work as it exists, one sees nothing more than an impressive fragment. The basis for judgment is most unified with the example of the church S. Ivo.

Evaluations can vary more before the facade of the Oratorio dei Filippini. It seems possible that the impressive design which Borromini made to harmonize with the existing structure was weakened by this fact. In assessing its relation to the adjacent church facade one should not forget that this did not appear final to Borromini; it was his wish to construct a second oratory facade on the other side of the church. The building of S. Agnese has at times been addressed as the absolute main work of Borromini, yet as it stands, this is no more than an attractive conglomeration from various hands and hardly suited to clarify the artistic accomplishment of Borromini.

Another question would be that as to his place among the great masters of the High Baroque. It has never been contested, even among his harshest critics, that his genius and his talents were among the very finest. The question remains exactly as it was in his own time – Bernini or Borromini. Nearly all of those who have delved into the art of both tend to give precedence to Bernini, even Eberhard Hempel, the most eager advocate of Borromini has placed his hero behind Bernini. I

believe that this resolution would only be confirmed by an analysis of the main works of the two rivals. The main work of Bernini, the colonnade of St. Peter's is decisive. It is possible to see the scales tip one way of the other in comparing Borromini's facade of the Collegio di Propaganda Fide to Bernini's facade of the Palazzo Montecitorio, the two tower designs by Borromini and Bernini and the two neighboring church facades of San Carlino and Sant'Andrea since each of these works is outstanding in their own way. Although it does not assume such a decisive place from the point of view of stylistic history, Bernini created *the* great work of the century on Roman soil in the colonnade of St. Peter's, and this is confirmed by a greater immersion in the intrinsic richness of this only apparently simple creation. Nothing in the work of Borromini can compare. Aside from Bernini however, Borromini was second to no other contemporary architect, and well above nearly all.

The originality of his achievement lies in the rare combination of the monumental and the bizarre – and provides a link to the actual art historical questions. These categories of artistic creation do not cohabit easily, and this is evident from unsuccessful attempts within his own work and those of his followers. Yet in his greatest works, Borromini was successful in melding them in an almost inconceivable way, and thus opened entirely new areas not merely for the field of 'style', but for art in general. This is also the fundamental quality of his art which would fascinate the masters of the German Baroque than its style.

This determination already resolves that Borromini must mobilize many and diverse elements to realize his goals. (It can then come as no surprise to find forms from Bramante among his own which recall the Late Gothic or exotic subjects). Borromini was never able to achieve as grand an effect as Lunghi with the marvellously simple motif of the triplicate columns in his masterpiece, the facade of SS. Vincenzo ed Anastasio. Borromini's profoundest artistic effects were the result of overcoming an opposition.

The small and tiny individual forms are a particular strength of his art – the conventional forms of doors and windows which he is able to lend the vigour of unprecedented originality, his profiles which show us the groping hand of a most gifted sculptor.

Something in the manner of a reverse effect, every unique achievement involves a unique hazard for its purely artistic aspect. This presents itself differently in Bernini than in Borromini, and differently than in the work of their respective followers and 'pupils'. Bernini was running the risk of veering into academicism on the one hand and hollow effects on the other. His followers, such as Fontana showed aridity and opportunism. The danger for Borromini was abstraction, calculation, fantasy and immoderateness which is absent from even the weakest productions of Bernini – traits which emerge in Guarini on the level of caricature. These poles are as characteristic of general dangers within the Baroque generally and when they were controlled, this led to the most typical triumphs of the Baroque.

IV.

If one wished to demonstrate less the greatness of Borromini's art, but rather the unique qualities of his creative process, then one should not present the four or five main works as we have already discussed them, but rather the tombs in S. Giovanni in Laterano along with the contemporary engravings recording the unexecuted or lost tombs from the same group. It would also be necessary to view the many hundreds of *Borromini drawings preserved in the Albertina in Vienna*, which are among the most remarkable drawings to survive from the hand of an architect. Sheets such as the eight various designs for the side chapel in San Carlino (Albertina number 174 illustrated Hempel, *Borromini*, p. 40), or the variations on the Giacomo della Porta windows from the Palazzo dei Conservatori (Albertina number 311, Hempel, plate 44) reveal another 'strength' of Borromini which nowhere appears in his self-enclosed and completed works. This strength consists in the free play of the imagination on a given theme. It is far more than a simple test of possibilities for a practical architectural goal. This is a form of architectural imagination in which all of the possible variations contribute to realizing the idea as form, more abundant than its individuations and therefore only realizable in a multiplicity of works viewed simultaneously. Such architectural situations ('Baugelegenheiten') are rare; one might compare the variations by Johann Bernhard Fischer von Erlach on the star-shaped garden structures for the park of the archbishop of Salzburg in Klesheim. Such things are usually remain in the realm of architectural fantasy and condemned to remain on paper.

There is an unusual record of Borromini's creative process which directs attention to a completely different area of his activity. It is the text composed by Virgilio Spada from the directions of Borromini and posthumously published in the volume *Opus Architectonicum*. In a manner unique in the entire tradition of publications on architectural theory, this text describes the process leading to the final design for the abbey of the Filippini, not the extrinsic history of its construction but the development of the form and the forces determining it. Such an emphasis on the process of becoming, on the dynamic aspect as opposed to rigid regularity, provides a literary reflection of the artistic principle of Borromini itself.

These observations of the creative process and intellectual manner of Borromini could only be separated from his style and his 'art' in an indiscriminate way.

V.

For a century, the art of Borromini exercised its influence on nearly all of European art, and was only rejected from the outset by a small minority, embracing English and Dutch Classicism. When the latter ideas progressed and finally triumphed in the French Revolution, this demise of the Baroque pulled Borromini

down as far as possible. For the following century, his name was either forgotten or only conjured as a deterring example.

When the 'second Baroque' of the 1890's arrived at a rather superficial rediscovery and rehabilitation of the first, Borromini was also rediscovered. Cornelius Gurlitt, *Geschichte des Barockstiles in Italien* (which appeared in [Stuttgart: Ebner & Seubert (Paul Neff)] 1887) includes the first lines attempting to do justice to Borromini. To appreciate this, one should compare what Jacob Burckhardt or Wilhelm Lübke wrote about Borromini.

Today, there are essentially two aspects to the judgment of his work. One of these is the mélange of true and false enthusiasm from the period following 1918, which attempted to grasp Borromini as a sort of Expressionist, and therefore misunderstood him. This Expressionism viewed the style of Borromini more than his actual art, and spoke of Borromini while actually referring to themselves. The second element in the judgment was the classicism of the 1930's which was worlds apart from Borromini's approach to form, but might for that very reason provide a better understanding of his art. Amid the profound rejection of his style, the arch-classicist Milizia (writing around 1780) can be seen to express an open admiration for the genius of Borromini and the greatness of his art 'Si scuopre pero anhe nelle sue maggiori strambaletezze un certo non sò di grande, di armonioso, di scelto, che fa conoscere il suo sublime talento'. The unhistorical judgment our 'own time' might say something similar about Borromini. 'How rare is perfection – such that one can do nothing other than marvel and admire it' (Goethe writing about Caspar David Friedrich). To this is added the fact that Borromini affects the German temperament in a way that appears not so strange as perhaps remote. I have met a number of people who have felt touched (in a way difficult to describe) by nothing in Rome so much as San Carlino, San Ivo or the tower of S. Andrea delle fratte.

Introduction to the New Edition

1.

A future monograph about Borromini will be supported in various parts by the foundations provided by research in the sources.

1. A determination of the place of Borromini in the history of style, the development of his artistic language, its conditions and consequences (the approach of stylistic history).
2. A consideration of his creative manner and intellectual mode, his disposition and their basis within the totality of his personality (psychological approach in the broadest sense).
3. A study of the commissions which were put to Borromini, with their reasons within the totality of the society and 'culture,' which he served and his relationship to these commissions (the 'sociological', social- and culture-historical approach).

Each of these approaches is preparatory; they do not find their termination and conclusion until the 'arching' part of the monograph:

4. A thorough clarification of Borromini's 'art', his peculiar artistic character, his unique achievement and its rank (the actual art historical approach).

The following publication which is reprinted without changes beginning after the present introduction includes a sketchy contribution to the characterization of Borromini's style in the fourth part, but aside from this primarily features the other approach.

Originally, there had been a plan to supplement the present study with two further essays which would have comprised a second volume – including a study of the smaller and the tiniest of Borromini's individual forms and a thoroughgoing structural analysis of his main works.

This more precisely characterizes what the present study is and is not than did the introduction to the first edition. As I had already stressed there, it provides a 'first approach' and nothing more. Its subtitle might even be 'An introduction to the creative manner and intellectual mode of Borromini with an appendix about his place in the development of style'. For somebody not trained in the history of art, its value might lie in the fact that it could possibly provide an introduction to the incomparable treasure of the Borromini drawings, the majority of which are preserved in the Albertina. It is an unmatched pleasure to study them, if indeed one is able to summon the necessary patience like those lovers of music who do not shy away from occasionally immersing themselves in a theoretical book, such as a study of the counterpoint of their favourite composer.

In order to indicate at the very least how a consideration of the style and intellectual disposition can be related to that of his achievement and its place in the scale of quality, I have added the 'New Essay on Borromini' at the beginning.

This might hopefully abrogate the most important misunderstandings on the part of my critics and sufficiently consider their justified objections.[104]

So much for the goals, and allow us now to speak of our method.

Aside from stylistic analysis, as it is by now firmly established but still allows for improvement, the preferred method of this study has been genetic analysis and structural analysis. I have written elsewhere about these methods of the 'younger Viennese School' and the objections they have elicited.[105] These have been endorsed by scholars working in widely differing approaches. An Italian critic of this study was able to conclude that 'questo metodo (i.e. il studio della singola opera dell'arte mediante analisi strutturali) liberandosi da certi residui de fenologismo positivista...potrebbbe veramente diventare il metodo per eccellenza della storia dell'arte figurativa').[106] One must stress that the present study does not include any fully fledged structural analysis. Such an analysis has only been pursued to the degree that it serves the particular purposes of this second approach.

[104] Cf. the review in *Arte*, new ser., vol. 3, 1931, pp. 256-258.

[105] Hans Sedlmayr, 'Geschichte und Kunstgeschichte', *Mitteilungen des österreichischen Instituts für Geschichtsforschung*, 50, 1936, 185-199.

[106] Roberto Salvini, *La nuova Italia*, May 20, 1936, 148.

I still find the fundamental idea of this method to have been most clearly expressed in a correspondingly adjusted citation from Wilhelm von Humboldt, which I therefore repeat once more: 'What is still lacking from the general history of art, is the perseverance to enter into a knowledge of the individual works, since otherwise the comparisons based on such a general level are of little value. Up to this point it has been considered sufficient to observe certain varying qualities of style and then compare a relative abundance of forms among themselves. Yet even the art work of the crudest of nations is far too noble a product of nature to be diced into such a random series of parts and studied isolated in such segments. Its essence is organic, and it is necessary to study it as such'.

2.

A second principle of the studies should be to answer all of the questions which arise with strictly verifiable decisions. I continue to adhere to this. It is a true triumph of scholarship when a question can be decided with actual reasons where only opinions had been previously available. This should not meet with much opposition from scholars.

In 1930, I had undertaken to incrementally resolve certain questions surrounding the present subject. The extent to which I might have been successful can remain undecided. One could not however abandon this precept without abandoning the idea of an objective history of art ('ohne die Kunstgeschichte als Wissenschaft aufzugeben'). It is certainly true that some of the reasons we have given were not sufficiently grounded, such as the reasons I gave for the unique form of lighting demanded by the works of Borromini. Progress then consists not so much in replacing my claim with another, but rather to discover a basis for reaching such a decision, in this case which mode of illumination is in fact the most suitable.

In this study, I have only conjured such theoretical considerations in connection with the exposition. This has its advantages, but I also have not overlooked its disadvantages. I would hardly repeat this, among other reasons, because some things have in the meantime come to be accepted as natural.

Today, I believe that the greatest shortcoming of this study is that it seems 'forced' in many ways. It reveals something of the tendency of 'the 1920's' to oversimplify reality somewhat too abstractly (constructivist). This might be acceptable, but also deadly, if this were no more than a mere initial approach to the material, where such simplifications can be taken in stride as long as the intention exists to go beyond them in later approaches. Not even the most visionary and objective scholarly study is spared traversing the deadliness of abstraction.

3.

One could summarize some of the requirements facing future Borromini studies as follows:

The critical basis for the sources remains the book published by Hempel in 1924. There have been only very few additions and corrections to be made since[107]. What is still lacking is the critical register of the drawings by Borromini, which Hermann Egger already began many years ago. Then there must be a commented edition of Borromini's *Opus Architectonicum* including a comparison between the as yet unpublished original manuscript of Virgilio Spada and the text of the published version of 1725.

The study of the stylistic development will become more refined once there are monographs covering the work of the other great Baroque masters. A monograph about Pietro da Cortona and a new study of Bernini as an architect would be particularly significant for the further study of Borromini.

To better recognize the artistic origins of Borromini we require a study of his individual forms. Beyond this more than anything else a thorough study of the engravings published by Giovanni Battista Montano[108]. It seems that the books of Montano provided the 'spectacles' through which Borromini viewed antiquity. To reach this conclusion it is only necessary to consider a plate from the 'Scelta'. If the relevant illustration by Montano were not there to substantiate the mediation beyond doubt, one would certainly have objected to the idea that Borromini's design for S. Agnese (Albertina number 51) was genetically related to the so-called 'Heroon of the Divus Romulus' on the Roman Forum, and there would have been attempts to explain this as a 'convergence' from the problem at hand. It also strikes me that Montano's imaginative reconstructions of the putative tombs with regularly repetitive columns provide us with a new root for the Spada colonnade of Borromini, and with it for the Scala regia of Bernini. This influence from Montano has not been previously considered. It leads into the question of the development of new forms under the mantle of reconstructions from antiquity. Certain antecedents to Borromini in his compatriot Ricchini seem less significant.[109]

There can be no doubt that a socio-historical survey of the art of Borromini (as numerous authors have already lamented) could be important. The main question for this to address would be – how did it occur that the Roman Seicento patrons granted the architect such unbelievable freedom in his designs; that spatial forms were accepted which appear more than dubious in their liturgical function (S. Ivo) and whose spiritual motivation could only be found circuitously; that such

[107] Cf. Brauer and Wittkower as in note 3. cf. Dagobert Frey, 'Berninis Entwürfe für die Glockentürme von St. Peter in Rom', *Jahrbuch der Kunsthistorischen Sammlungen in Wien*, new ser., 12, 1938, 203-226.

[108] The architectural books of Montano are listed under number 2611 of the new catalogue of the Ornamentstichsammlung of the Kunstbibliothek in Berlin [Peter Jessen, *Katalog der Ornamentstich-Sammlung des Kunstgewerbe-Museums Berlin*].

[109] Cf. [Paolo Arrigoni, Ricchino, Francesco Maria] Thieme and Becker eds. *Allgemeines Lexikon der bildenden Künstler*, 28, Leipzig: Seemann, 1934, 244-245, also Maria Luisa Gengaro, 'Dal Pellegrino al Ricchino', *Bollettino d'Arte*, 30, 5, November, 1936, 202-206.

extremely diverse spatial forms could all serve the same Christian cult[110]. Furthermore, as to the significance of the fact that such an influential architect could have been such a solitary person as Borromini. I might anticipate a partial conclusion about this question and venture that as a 'freely operating artist' he might have been independent of commissions from a strictly defined society typical for artistic patronage, a social situation characteristic for later social phases where 'innovations', invention and competition present themselves as a requirement.

The fifth and sixth sections of this study could be improved if we became able to achieve clarity as to the national origins of Borromini. These are areas in which genealogical research can make an important contribution to the history of art. The preserved portrait engraving and the threadbare biographical details are insufficient as they are known. Until more facts are known, there can be no interpretation of the art of Borromini based on racial-psychological distinctions. The question itself does not disappear however, and is very much justified in spite of all objections from art historical circles of a 'westerly' bent ('der "westlerischen" Kunstgeschichte'). As permeated as we are by the intellectual essence of these works of art, it remains certain that such work can only be created by human beings who expend their entire intellectual and physical nature into this activity. The intellect also is grounded in nature, otherwise it would be abstract and without roots. It is in any case problematic to guess the extent to which a psychological interpretation in individual or racial or typological factors shared by all of the races. I would follow Eickstedt in conceiving of the types proposed by Kretschmer as common to all of the races. (I am not unaware that they have been challenged). For those of us with a tendency to trivial misunderstandings I must add that the 'schizothyme' type as described by Kretschmer does not denote a mental illness – there are no works of art by the mentally ill, but is rather an emotional and physical disposition, or to use an older term, a 'temperament'.

One more comment about the sixth section. The comparison between Francesco Borromini and René Descartes is not intended to refer to a relation of the art of the former to the philosophy of the latter (each according to their content), but rather between the creative method of Borromini with the mode of thinking and vision of Descartes. The relationship might lie in that fundamental characteristic of a given human type which Kretschmer has described as the capacity for segmentation and seen as a 'radical' which could account for a series of emotional qualities.[111]

4.

Some general observations in conclusion. A typographical error has moved the Palace of the Farnese to Vicenza – from its actual location in Piacenza. The interior of S, Giacomo dei Incurabili was not designed by Maderno, but by

[110] Not in the form of the prejudiced, circular reasoning and ignorant rejoinder of Florence Diamond in her review, *Art Bulletin*, 17, 1, March, 1935, 107-108

[111] Ernst Kretschmer, *Geniale Menschen*, Berlin: Springer 1929, 56 ff.

Francesco Capriani da Volterra (as Harald Keller has pointed out). The 'domed space' in the Villa Hadriana did not have the complicated Baroque form which I had assumed along with Winnefeld and Gusman, but consisted in an octagonal core with corner niches.[112] As such, it cannot be considered as a possible concrete source for the designs by Guarini. The study of Hülsen does nonetheless demonstrate that spatial connections of the type designed by Guarini also had existed in ancient architecture.

[112] Christian Hülsen, *Der kleinere Palast in der Villa Hadriana in Tivoli*, Sitzungsberichte der Heidelberger Akademie der Wissenschaften, Philosophisch-historische Klasse, Jahrgang 1919, 13. Abhandlung.