

**GEOMETRY IN ARCHITECTURE:
AN APPROACH DEVELOPED ON THE ARCHITECTURAL AND
PHILOSOPHICAL DISCUSSIONS**

**Ph.D. Thesis by
Ayşe SIKIÇAKAR YÜCEL**

Department : Architecture

Programme : Architectural Design

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Ayşe SIKIÇAKAR YÜCEL
(502912106)**

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**Supervisor (Chairman) : Prof. Dr. Yurdanur DÜLGEROĞLU
YÜKSEL (ITU)
Members of the Examining Committee : Prof. Dr. Günkut AKIN (ITU)
Prof. Dr. Semra AYDINLI (ITU)
Assoc.Prof.Dr. O.Faruk AKYOL (IU)
Assoc.Prof.Dr. Bülent TANJU(YTU)**

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**MİMARLIKTA GEOMETRİ: FELSEFİ VE MİMARİ TARTIŞMALAR
ÜZERİNE GELİŞTİRİLMİŞ BİR YAKLAŞIM**

**DOKTORA TEZİ
Ayşe SIKIÇAKAR YÜCEL
(502912106)**

Tezin Enstitüye Verildiği Tarih : 12 Kasım 2010

Tezin Savunulduğu Tarih : 10 Haziran 2011

**Tez Danışmanı : Prof. Dr. Yurdanur DÜLGEROĞLU
YÜKSEL (İTÜ)**
**Diğer Jüri Üyeleri : Prof. Dr. Günkut AKIN (İTÜ)
Prof. Dr. Semra AYDINLI (İTÜ)
Assoc.Prof.Dr. O.Faruk AKYOL (İÜ)
Assoc.Prof.Dr. Bülent TANJU(YTÜ)**

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Ayşe Sıkıçakar Yücel
Architecture

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ABBREVIATIONS

CPR	: Critique of Pure Reason, by Immanuel Kant
CJ	: Critique of Judgement, by Immanuel Kant
ID	: Inaugural Dissertation, by Immanuel Kant
B&T	: Being and Time, by Martin Heidegger

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SUMMARY

This study regards *perception*, use of *metaphor* and *representation* all joined together, through architectural and philosophical arguments, highlighting their relations and the complexities.

Modernist thinking gave a way in favour of reducing the diversity and of the visual world into 'visual form'. The main transition in the theories of space in the late 19th and early 20th centuries came alongside other cultural tendencies: like the changes in perspective, separation of sciences and the change of their foundations. Particularly invention of Non-Euclidean geometry and its making possible structures for abstract notion of space, investigations of modern physics, and physiology and psychology's rooting their research in perception became important factors.

The philosophical, scientific, and aesthetic discourses overlap with mechanical techniques, institutional requirements, and socioeconomic forces. Developments in the technological system of visualizing through new optical devices are among the dominant factors preparing the changes related to visual perception and the position of the observer within world and the set of relations he/she establishes to interact with the environment. The isolation of eye, changing tactile relations with the world are among the issues helping us to understand the general situation of a subject.

The decade of the 1880s can be viewed as the vibrant crossover point between 19th aesthetic tendencies and 20th century visions of abstract art and architecture. In the process of establishing modern notions of space and form, in parallel to the theoretical efforts, members of French Academy, around 17-18th century, clearly stating that the main issue in architecture should be 'reasonability' and 'necessity'. Outside of French Academy, contributions from the German speaking countries involving approaches in aesthetics which was a new discipline in philosophy then seem important.

It was Immanuel Kant who provided the paradigm for German philosophical treatment of form and space in the 19th century. This is one of the reasons that this study compares two important names, Kant and Heidegger, in relation to the criticism of modernity in general, and geometry's role in it in particular. In this respect, the problems are generally related to representation and the nature of design.

Modernity and its further criticisms, existing with some similar points in philosophy and architecture, focusing on issues especially relating to how to look at perception, i.e. world view changing from *schematic/geometric* to whole body's involvements, how perception evolves from early Modern period, as early as Immanuel Kant, to 20th century discussions on phenomenology and taking this line to topics relevant to language and metaphor seems valid.

MİMARLIKTA GEOMETRİ: FELSEFİ VE MİMARİ TARTIŞMALAR ÜZERİNE GELİŞTİRİLMİŞ BİR YAKLAŞIM

ÖZET

Bu tezde, mimarlığın farklı dönemlerinde geometrinin ele alınış yolları ile mimarlığın temel problemleri, mimari tasarım süreci, mimarın bireysel konumu ve bunun gibi konular arasındaki karşılıklı ilişki irdelenmektedir. Bu amaçla, öncelikle bu ilişkinin varlığının ortaya konması, bununla bağlantılı olarak da farklı dönemlere göre değişken olabilen niteliğinin belirlenmesi gerekli görülmüştür. Mimarlıktan önce, genel olarak geometri ve bireyin konumu ile ilgili tartışmaları incelemek yararlı görülmüştür.

Felsefedeki modern ve sonrası yaklaşımlarca bireyin konumu tartışılırken geometrinin temel ancak değişen bir rolü olması dikkat çekicidir. Geometrinin farklı ele alınış şekilleri, modern ve sonrası tartışmaların özellikle sanat ve sanatçı üzerine olanlarında, farklı dönemlerin kendi içlerindeki temel çıkış noktalarıyla bile çelişmeleri belirgin hale getirebilen çok özel durumları ortaya koymaktadır. Bir başka deyişle, bireyin konumuna ve geometriye verdikleri önemde birbirine zıt olan felsefi düşünceler, sanatla ilgili konular söz konusu olduğunda geometriye yaklaşımları ve bununla ilişkili olarak da bireye yaklaşımları açısından kendi özlerine de zıt olabilmektedirler. Bunu, düşünürler arası zıtlığın yanısıra, düşünürlerin kendi iç zıtlıklarının varlığı belirgin kılmaktadır. Bu bazdaki bir incelemenin sonuçlarının mimarlık alanıyla karşılaştırmasının, birey olarak mimarın konumu ve tasarımın doğası ile ilgili tartışmalara hem yeni yorumlar katacağı, hem de felsefe tartışmalarına katkı yapacak geri yansımaları olacağı düşünülmektedir.

Bireyi birey yapanın ne olduğu, insan düşüncesinin ana odaklarından birini çok uzun süredir oluşturmaktadır. İnsanın, algılayabilme, kavram üretebilme, duygulara sahip olma ve eylemde bulunabilme özelliklerinden herbiri kimi kez kendi başına, kimi kez de birkaç özelliğin bir arada olmasıyla bireyi birey yapan unsurlar olarak değerlendirilebilmiştir. Bu özelliklerin herbiri farklı disiplinler çerçevesinde farklı önceliklere sahip olabilmektedir. Bilim, felsefe ve sanat da genellikle insanın kendini farklı şekillerde ama özelliklerini en yoğun kullanarak ortaya koyduğu üç temel alan olarak değerlendirilmektedir.

Bu bağlamda günümüzdeki yaklaşımlardan biri olan Deleuze ve Guattari'ye ait tanım, bireye ait indirgenmesi mümkün olmayan üç düzlemde söz eder. İç elemanlarıyla birlikte indirgenemez olarak görülen bu üç düzlem, *felsefe*, *sanat* ve *bilimdir*: 1) Felsefenin sürekli var olmasının oluşturduğu düzlem; burada eleman olarak kavramları, kavramlar arası ilişkileri ve bu anlamda kavramların yadsınamaz biçimlerini buluruz. 2) Sanatın kompozisyon düzlemi; burada duyuları, estetik figürleri ve bununla ilişkili olarak duyumun varlığını ortaya koyan gücünü görürüz. 3) Bilimin referans ya da koordinat düzleminde de sayıların ve kısmi gözlemcilerin üzerine kurulu bilginin işlevi yadsınamaz. Beyinde birleşen bu düzlemler arasındaki

geçişler ise bu düzlemlerin kendilerinden daha önemli bir tartışma konusunu gündeme getirirler. Kimi karışmalar her disiplinin kendi öz değerlerinin birbirinden ayrılabilirdiği dışsal karışmalardır. İçsel karışmalarda unsurların kendi düzlemleri içinde kalamadığı görülür; böylelikle karmaşık ve nitelenmesi zor düzlemler ortaya çıkar. Bir de yeri belirlenemeyen karışmalar vardır. Çünkü her disiplin kendisine göre bir olumsuzla ilişki içindedir: bilim bile bilim olmayanla ilişkilidir (Deleuze ve Guattari, 1994).

Bireyin evrendeki yerini, kendi varoluşunun önceliğine dayandırması felsefede modern düşüncenin ana özelliği olarak değerlendirilebilir. Bu bağlamda bireysellik¹ ('Subjectivity' terimi bu tez kapsamında, Descartes ve Kant gibi modern dönemin erken filozoflarına referans verildiğinde, bağlamsal uygunluk imkanları içinde öznellikten çok bireyselliğe yakın bir konumu ifade etmektedir.) tartışmalarının başlangıcı olarak Descartes ve onun "Düşünüyorum öyleyse varım" yaklaşımı ilk olarak kabul edilir. Düşünebilmek birey oluşa eş görülmüştür. Bununla birlikte, Descartes'a göre evrenin düzeni tanrısaldir. 18. yy'ın sonlarına doğru Kant, bilincin yapısını tanımlamanın tanrısalığa başvurulmadan felsefe tarafından yapılması gerektiğini savunur. Kant'a göre, felsefenin sunabileceği bilişsel ve etik kesinlik, bizim dışımızda değil içimizde temellenmiştir (Bowie, 1993). Düşüncenin sağlamlığı için aranan garanti de, dış dünyayla olan ilişkimizin önsel olarak (a priori), geometrik bir formata dayalı olduğunun öne sürülmesiyle elde edilmeye çalışılmıştır. Yani bireysellik tartışmalarının başlangıcı geometriyle sıkı sıkıya ilişkilidir. Ancak Kant, geç dönemlerinde, doğanın oluşturduğu dış dünya ve kendi bilincini kendine konu eden insanın iç dünyası arasındaki bağlantının varlığından söz edebilmek üzere, neyin güzel olanı takdir edebilmemiz ve güzelliği yaratabilmemize sebep olduğuyla ilgilenir. Bu aşamada geometriye bakışı da farklılaşır.

Kant için mekan/uzay *a priori* (önsel) olarak bizim deneyimlerimizden önce zihnimizde mevcuttur. Bu, Kant tarafından felsefede Kopernik değişimi olarak adlandırılan 'tanıma nesnelere izler' anlayışının 'nesnel tanımayı izler' şekline çevrilmesinin ve *a priori* bilginin varlığı sebebiyle bizi nesnel yargılara ulaştırabileceğinin savunulabilmesinin dayandığı noktadır. Kant'ın önerdiği sistem, stabilitesini kendi bünyesinde arayan; dış dünyanın varlığını reddetmeyen ancak onun kendi iç gerçekliğinin bizce ulaşılmaz oluşu sebebiyle bizim düşüncemizin temelini yine bizim düşünme sistemimizin içinde yer alması gerektiğini savunan bir anlayışa dayanmaktadır.

Bu sistem matematikteki gibi senteze dayalı olmalıdır diye düşünen Kant, zaman ve mekan/uzaydan oluşan *a priori* şekilleriyle sezginin (İng. intuition, Alm. Anschauung-to look at) güvenilirliğini ve sentezin sonucu olan yargıların da buna dayalı nesnellliğini kanıtlamaya çalışır. Bu bağlamda zaman ve mekan/uzay ancak öznel olabilir. Zaman, dışımızdaki olaylar kadar içsel süreçlerin de eşzamanlılığını ya da ardışıklığını idrak edebilmemizi sağlar ve aritmetiksel olarak, sayılarla temsil edilir. Mekan ise, ancak geometri ilkeleri uyarınca dışımızdaki nesnelere konum ve ilişkilerini tanımlayan, matematiksel bir uzaydan ibarettir.

Burada mekan diye bahsedilen, aslında sınırları olmayan bir uzaydır; tasavvuru (representation) ne imgelemin (imagination) ürünü, ne de anlığın (understanding) ürettiği kavramlardan biri değil, ancak önsel (a priori) sezgi (intuition) olabilir. Kant

¹ 'Subjectivity' terimi bu tez kapsamında, Descartes ve Kant gibi modern dönemin erken filozoflarına referans verildiğinde, bağlamsal uygunluk imkanları içinde öznellikten çok bireyselliğe yakın bir konumu ifade etmektedir.

için, farklı mekanlardan bahsedilmesi, tek bir uzayın parçalarından bahsedilmesi demektir. Parçalar hepsini kapsayan tek bir uzayı aşamaz. Bu nedenle, uzayla ilgili genel kavram, yalnızca mekanın sınırlarına dayalı olabilir. Başka deyişle mekanın sınırlarını kavramlaştırabilen anlık (understanding), bu sınırlar yoluyla sınırsız uzaydan bahsedilmesini mümkün kılar. Uzayın içerebileceği şey, dışımızdaki nesnelere birbirleriyle olan ilişkilerine uygulanabilen geometrinin önsel ilkeleridir. Böylelikle öznel mekan, kökeni önsel sezgide olan ve deneyimlerimizden çıkarsayamayacağımız geometri sayesinde nesnellik kazanır (Sıkıçakar, 1996).

Üzerinde durulması gereken, sınırsız olana sınırlar getirmek yoluyla onun gerçek gösterimlerinin elde edilebilmesidir. Sınır ve ölçüt koymamanın, böylece sınırsız olanı, ölçütleri olmayana ölçülebilir ve nesnel bir değerlendirmeye tabi tutulabilir kılmanın, sağlamlık açısından Kant'ın sistemindeki değeri büyüktür.

Felsefenin alanını doğa, özgürlük ve sanat olarak ayıran Kant, kuramsal olan yani anlığa ilişkin olan ile pratik olanın yani uslamlamaya (reason) ilişkin olanın, bağdaştırılabilmesini yargı gücü (judgement) aracılığıyla sağlamaya çalışır.

Kant, estetik yargıları, erekli yargılardan ayırır. Tasavvurların (representations) duyuları değil biçimleri nesnel olabilir. Bizde zevk duygusu uyandıran bir biçimin aynı zamanda erekli oluşu onun saf güzelliğine indirilmiş bir darbedir ve Kant bunu 'bağımlı' türde bir güzellik olarak tanımlar. Bu yüzden de mimarının asla saf güzelliği olamayacağını söyler (Kant, 1952).

Kant, güzel olanın yanı sıra daha üstün ve akılla ilgili bir duygudan, *yüce* olandan (sublime) da söz eder. Güzel olan, biçimi aracılığıyla etkide bulunur; ancak, yücenin sezgi tarafından değerlendirilecek bir biçimi yoktur; burada doğrudan doğruya bir sınırsızlığın kavranması söz konusudur. Kant'ın sistemi, bu noktada, temellerindeki sağlamlığı, sezginin güvenliğinden ötede arar hale gelmiştir. İlk eleştirisinde (Critique of Pure Reason, A 1781, B 1787) geometriyi, temelin sağlamlığı için mutlak gören Kant, estetik konularını ele aldığı üçüncü eleştirisinde (Critique of Judgement, 1790), geometrik biçimlerin düzenliliğinden ve 'imgelemin (imagination) özgür oyunu' üzerindeki sınırlamalarından yakını; geometrik biçimlerin, anlığın (understanding) kavramlarına yönelik olduğunu ve güzelliği 'bağımlı' kıldığını söyler.

Herşeye rağmen Kant'ın sistemi kendi içinde pek çok şeyin sağlamasını yapmanın mümkün olduğu, ikiliğe fazla yer olmayan, oldukça sağlam bir sistemdir. Ancak sonuçta görülenlerden biri de estetiğin, metafizik gibi sağlam temellere oturtulamayacağı olmuştur.

Kant'ın, XVIII. yüzyılda, metafiziği geometriye dayandırarak sağlam temellere oturtma çabasıyla, Heidegger'in mantığın temellerinin metafiziğe dayalı olduğunu iddia ettiği XX. yüzyılın başlarına gelince, aradaki önemli adımlardan biri Husserl tarafından atılmıştır.

Husserl, fenomenolojinin kurucusu olarak bilinir. Kendinden önce, hocası Brentano'nun ilk adımlarını hazırladığı fenomenoloji, Husserl tarafından olgunlaştırılmış, Heidegger tarafından da kendi felsefesindeki metod olarak gösterilmiştir.

Kant ve Heidegger arasındaki önemli adımları Schelling, Hegel ve Husserl oluşturur. Kant ile başlayan Alman İdealizmi'nin iki önemli isminden Schelling, Kant'taki özne ve dış gerçeklik ayrımını sanatın birleştiriciliği ile ortadan kaldırmaya çalışmış, Hegel'de ise sanat eseri, 'mutlak ben'in kendini görebildiği bir ürünü olarak değerlendirilmiştir. Husserl'de görülen, dış dünyadan mantığa dayalı bir indirgeme

yoluyla gerçekliğe ulaşma çabasına, Heidegger’de dünyada oluş (being-in-the-world) ile karşı çıkmıştır.

Bu tezde, Kant ve Heidegger, iki zıt uç olarak, bu zıtlık vurgulanmak üzere tek bir bölüm halinde ele alınmak istenmiştir. Bundan amaç, bu iki düşünürün karşılaştırılması yoluyla, mekana karşılık mekansallık iddiasının ortaya konmuş olduğunu göstermek, mekan ve geometri kavramlarını zıtlıkların eleştirisi yoluyla bir kez daha araştırmaktır.

Felsefede bireysellik tartışmalarında sanat, sanatçı ve sanat ürününün önemli ve vazgeçilmez yerleri vardır. Aslında, modern dönemde bile, bireyselliğin geometrik formata oturtuluşunun zayıfladığı noktalar sanatla ilgili tartışmalarla ortaya çıkan noktalardır. Bu yüzden Kant ile başlayan, bireysellik ve sanat ilişkisi tartışmaları yine mimarlığa önemli ip uçları taşıyacaktır.

Heidegger çeşitli noktalarda mimarlık teorisine girmiştir. Dünyada-varolma (*Being-in-the-world*), varolmadan çok olma (*becoming instead of Being*), ikamet etme, yaşama (*dwelling*), ortaya geliş (*unconcealment*), farkındalık (*concernful activity*), mekan yerine mekansallık (*spatiality*) ve yer (*place*), zamanlılık (*temporality*) ve eşdeğerlilik (*equiprimordiality*) onun düşüncesinin önemli noktalarındandır. Kısaca Heidegger, Descartes’la başlayan modern tutumu “Varolduğum için düşünüyorum” diyerek tersine çevirir diyebiliriz. Böylelikle geometrinin bizim tutum ve davranışlarımıza olan önceliği de tamamıyla geri plana kayar ve geometri ancak tematik bağlamda yer bulabilir.

Heidegger’in mimarlığa olan belirgin etkisi bilinmektedir. Onun felsefenin temel sorunlarını kökten sorgulaması gibi bir çok disiplinle beraber mimarlık da temel sorunları farklı düzlemlerde görmeye başlar. Heidegger’in ilk ve ikinci dönemlerindeki ağırlık noktaları ve mimarlığa yaklaşımı ayrıntılarıyla Bölüm 2.2’de incelenmektedir. Buradan çıkan sonuçlar, Post-Strüktüralist tavırları değerlendirirken ve Bölüm 4’teki tartışmalarda temeli oluşturacaktır.

Başlangıçta bu denli geometriye bağlılık insanın felsefe dışındaki alanlardaki tavırlarına da yansımış ve doğal olarak mimarlıkta da kendine özgü sonuçlar yaratmıştır, bunlar üçüncü bölümde gözden geçirilecektir.

Bilimin geometriyi Öklitçi olmayan yöntemlerle yeniden tanımlaması felsefedeki bireysellik tartışmalarında geometrinin rolünü değiştirmiştir. Bunu izleyerek sanat ve mimarlık alanında da geometriyle ilişki farklı yönler kaymıştır. Bu, kimi kez, doğaları birbirinden farklı olsalar da, hatta zıtlıklara varan yapısal farklılıklar taşıyabilseler de bilim, sanat ve felsefe arasında bazı durumlarda birbirine geçişlerin net olmaması yüzünden net düzlemlerin ortadan kalkması sonucunu doğurmuştur. Mimarlıkta Marcos Novac’ın son dönemde yaptıkları da, kurgusunda matematik destek olsa da sanatsal sunum ve uçlarda mekan arayışlarıyla bu geçişler bağlamında bir örnek oluşturmaktadır. Eisenman için de “çizgiyi artık vektör olarak görmeliyiz” yorumu ilginç bir örnek oluşturabilir. Bu konularla ilgili tartışma bölüm 3.1’te yoğunlaşmaktadır. Bölüm 4’teki eleştirilerde izlenen tutum da bu yoğunluğu sürdürmektedir.

Kant’ın düşüncenin sistemleştirilmesi ve lineer eklemelenen adımlardan oluştuğunu varsaymasının etkileri, Modern düşüncenin yadsınmaz bir göstergesi olarak, yalnızca felsefede değil, 19.yy sonunda önemli adımlar atılan psikolojide özellikle algı hakkında kurulan modellerde de oldukça etkili olmuştur. Gestalt’a kadar algı modelleri Kantçı şematik temsillerle sunulmuştur. Bu sebepler algı teorilerinin görsel

algı ağırlıklı odaklanmasında etkilidir. Fenomenolojik bakış ise algı konusunda bedenün tümünün etkisini vurgulamış ve şematik temsillerin etkisinden uzaklaşmada etkili olmuştur. Bu anlamda Merleau-Ponty önemli anahtardır. Konuşmanın ve düşünmenin eş zamanlılığı üzerine yaptığı vurgu da bu bağlamda algının çok da pasif bir aktivite olmadığını hatırlatır. (Merleau-Ponty, 1994)

Mimari temsil için yapılan tercihlerin de, mimarlığın mekan algısı hakkındaki teorilerle belirli dönemlerde paralellikler göstermesi, bu tez için yapılan çalışmalarda ortaya çıkartılmıştır. Bu nedenle bu tez, algı ve temsil teorilerinin birlikte değerlendirilmesini savunmaktadır. Bütün bu dizgeye, algı ve düşünce üretmede temel yapılardan olan metafor üzerindeki çalışmalar eklenmektedir.

Metafor hakkında mimarlıktaki tartışmalar, Dekonstrüktivist söylemle farklı bir ivme kazanmıştır. Las Vegas'tan ders alırken yapılan uygulamalardaki metafor yorumları mimarları pek fazla dertlendirmezken, yapıbozmacı tutumun yoğun bombardımanında mimarlar kendi itiraflarıyla "daha derin" ilişkilendirmeler peşinde olmuşlar, anahtar olarak görülen felsefeciler bir hayli tartışılmıştır. Bu tartışmalarda Kant aslında Modernite'nin etkilerinin bilimleşen algı teorilerindeki izlerinin temel kaynaklarından biri olarak hiç tartışılmamış ve mimarlığa da dolayısıyla yaptığı etkiler tam anlaşılmamış bir karakterdir, ve 1990ların mimarlığa felsefeyi kapsülleştirerek sunmaya çalışan ve mimarların hazırladığı "Reader" türü yayınlara pek dahil edilmemiştir. Kant, ya felsefe kökenli yazarların hazırladığı metinlerde ya da olabildiğince çok filozofu mimarlık alanında kısa metinlerle anlatan "Student Guide" türü kitaplarda kısa da olsa yer bulmaktadır, ancak genellikle mimarların en popüler ilgisine kaynaklık ettiğini ve mimarlıktaki etkilerinin estetik dışındaki alanlarda tam tartışılmadığını düşünmek yanlış olmaz. Dolayısıyla bu tezin akademik alana katkılarında biri de Kant'ın transandantal sisteminin algı ağırlıklı bazı teoriler, şematizm anlamında temsiller ve lineer düşünce akışlarıyla, aslında mimarlığa bir şekilde, hem de tasarım sürecine sızmış olduğunu anlatmaya çalışan bir tutum sergilemesidir. Bu yeni bir tartışma zemini ve bir tezin sunması beklenen de bu zemine kaynaklık etmektir, mimarlık tartışmalarında tezin sunacağı verilerin katkısının süreç içerisinde kendini gösterebilmesi umuduyla.

1. INTRODUCTION

“Architectural design process is a set of transformations” (Lessau, 2001).

Even if architectural design, as process, may not simply be reduced to a “set of transformations”, it is nevertheless related to several stages of transformations of space perception, place spirit, cognitive acts, aesthetic judgements, ascillations between thinking patterns and designerly creation, representational issues, linguistic and graphical skills, etc. -to mention the least. As a process it is difficult to be represented as a linear flux, and hard to grasp its whole stages all at one description regardless of the technique, i.e. graphical, verbal, metaphorical, etc. or from its products either graphical, literal or built spaces (including their media representations and live experience they provide).

Many previous studies have considered different stages of this process individually, i.e. by focusing on perception and representation as separate issues, and metaphorical structures as place quality, as goals of design process or sometimes part of representational preferences, but not usually as genuinly an underlying issue of the process of thinking and designer’s creation acts.

This study regards perception, use of metaphor and representation all joined together. It highlights the complexities of these issues and their relations, through architectural and philosophical arguments.

Here, philosophy of perception has usually taken as prior to psychology of perceptual process, since the latter seems most relied on the former, at its launch and its initiation stage as a unique, separate discipline, additionally at some cases, for description of the perceptual process, it is observed to be reflecting similarities with some linear models which may be found in philosophy.

As the aim is to clarify issues related to architectural thinking, the interest in philosophical arguments needed to be compact. It is believed that a focus on critical place of geometry in perception studies is needed; this dissertation wants to focus on

perception to add on the arguments of geometry in relation to representational choices, as well as schematization in thinking process and schematization's extension to metaphorizing. Representation studies in architectural theory is definitely not a new interest, but constitution of its relations with perception studies has not been an established approach.

An examination on the reasons why linearity in perception models has become the dominant systematic path and why schemata to describe it has been the major preference, directs interest to structures of Modern thinking and revelation of Modernity's underlying role.

A philosopher may not find chapters here as totally new issues, but could be benefitted from an architect's point of view to observe what areas a designer might be focusing on. Selection process of an architect and her comments to evaluate some problematic issues of philosophy in relation metaphor, aesthetics and design might provide nuances to divert philosophical interest. This could be taken as a feed-back to "thinking" by a designer / architect; and it is probably an opportunity to consider a new relationship, other than Tschumi-Derrida like 'lets design together', but as feed-backs to theory on what constitute designer's area of interest. Philosophers focusing on design might become more interested on what designers naturally focus in a speculatable area; designer's experience, not implying how everybody must be thinking about it, but what designer feels about, as she can represent a certain number dealing with academic side of architecture, and its education.

Reading some notoriously difficult philosophers from the first hand seemed to be discouraging for many architect scholars and this keeps the direct dialogue of architecture with philosophy a bit distant and indirect for many students. But a joint discussion from both sides, on a systematic feed-back of architects, about certain key concepts, keywords, and key issues is essential. Personal experiences have proved that even two side using the same native language understand some keywords and concepts totally different, as it is the case for the concepts of 'space' and 'representation' notoriously. Translations of these works in Turkish, for architects and philosophers, almost constitute the two ends of a long string and can only be joined together by reading each other, a bit systematically and perhaps sparing a little more time for some delicate content.

Research on certain periods of history, like enlightenment and modernity, has received common interest from several disciplines. Examining with their own reasons, philosophy and architectural history- theory have been interested in Modernity like many other disciplines have been.

Models and methods of design study looks at design theory, especially if the focus is on decision making, in respect to scientific based systems/processes, as well as statistical data analysis. Nevertheless, comparisons with philosophical models/methods and architectural design process seems relatively behind the scientifically based systematics if number of overall studies concerned. Even though the raise of interest occurred at slightly differently, at certain periods of times, linguistic/structuralist and phenomenological interests of architects have made them establish certain connections with philosophical methods starting from the 70es, an increased interest have started to grow in 90es especially with Deconstructivist discourse. It can be commented that many theoretical works observed in 90es by architect/theoreticians regarded philosophy as the source for them to borrow approaches, sometimes concepts and sometimes topics to create demanded areas in architectural history / theory discussions, meeting topics and for publicity.

A particularly good discussion of the 90es declares that, as for Heidegger metaphysics is a fate (Heidegger, 1990, 1993), theory is also inevitable in architecture. Questioning of 'theory' in order to explore the true nature or the essence of theory itself and of architecture, too, brings out different understandings of the theories, and the nullity of a homogeneous 'theory' in contemporary architecture.

In architecture, to what extend is the creation of theory independent from other areas? Architecture's relationship with other disciplines might affect its own theory. This relationship could be two-way, with architecture either adopting concepts or acting as a source of ideas. Among architects there seems to be an anxiety about adopting theories. In the case of philosophy Girault would say, "Nowadays architecture is a very insecure discipline: its search for legitimacy is so compelling that it has brought it into the vicinity of philosophy"(Academy Forum, 1992).

However, for Tschumi, adopting theories is perfectly normal, and moreover he is excited by the fact that architecture is in the position of exporting concepts; the things that architects touch upon help people to go to the next step of their own

discipline, whether they are writers, scientists or movie makers (Academy Forum, 1992).

Tschumi's words on adopting-giving relationships remind us in the first place of Derrida's response to his work. This also makes us think of other cases which show philosophers' interest in architecture. According to Andrew Benjamin, the history of philosophy has demonstrated a two-fold concern with architecture. "The first is by philosophy either addressing architecture as an aesthetic form (eg in Hegel's Aesthetics), or deploying architectural examples in a more general discussion of aesthetics or art (eg Heidegger's discussion of the Greek temple in *The Origin of Work of Art*). The second is the presence of architectural forms (eg. Kant's architectonic) or architectural metaphors in the development or construction of a philosophical argument" (Benjamin, 1990). It is possible to add the case of Wittgenstein as the third form of a philosopher's involvement in architecture which is, even though an ambiguous case, his dealing with the design of a building.

To Daniel Libeskind, theory should include political issues that concern building (Academy forum, 1992). There are many situations where politics find a place, for instance a huge building complex which lands like a giant bird on considerably large area of a town. Projects to welcome new century or a millennium have a political dimension, as do government buildings or even public housing projects. Politics takes different forms in cases of Albert Speer, Constructivists, Boullée and Ledoux or even green activists.

And yet, there are cases which seem to have no political overtones. But even in these cases there are things itching us that we still ask questions; questions other than costs, choice of materials, functional necessities. Even there are other questions which go beyond aesthetics. What things would still be bothering us? Sometimes areas of architecture, and in a wider sense city planning, intersect with other disciplines like sciences, mathematics, biology, as well as psychology, sociology, physiology considering issues of perception and architectural systems of representation. Though most architects are content with dealing multi-disciplinary issues, it is not always easy to have successful collaboration with the areas without a solid knowledge of their systems or even vocabulary with the established usage of certain terms in different ways for the two disciplines. As it has clearly demonstrated

for this thesis, to establish a long list of terms as an appendix became useful, as for some crucial words have rather different meanings for architects and philosophers. Especially if any translation involved from another language the problems become more drastic, and a good clarification is definitely needed for a thorough understanding. Therefore, the reader will find him/herself a challenge in discovering terminology as well as theoretical issues dealt with.

1.1 Modernity and Man's Relationship with the Universe

The way and time of architectural theory's separation from the other discipline's theories might arise as a question for us to start. For Vesely, the attempt to reduce the diversity and of the visual world into 'visual form' took place only in the late eighteenth century. "Paradigma, typos, symbol, allegory, emblem, impresa, schema, figura were used to grasp the meaning that was later given to the simple notion 'form' itself. All these terms should be seen as particular revelations of a primary transcendental reality (divine order, the world of ideas, etc.), and only in that sense were they also revelations of the invisible forms (ideas) and their particular visible manifestations and embodiments."(Vesely, 1985).

The main transition in the theories of space in the late 19th and early 20th centuries came alongside other cultural tendencies: like the changes in perspective, and a general, separation of sciences and the change of their foundations. Particularly invention of Non-Euclidean geometry and its making possible structures for abstract notion of space, investigations of modern physics, and physiology and psychology's rooting their research in perception. The result was in favour of a Bauhaus understanding. The process that abstract notions of form and space were obtained was not a short one; from early Modern thinking to Modern Architecture it took almost two centuries.

Regarded as a symbolic form of one's relation to the world Perspective has two contents in relation to this symbolisation; participatory (the reality of what is seen) and instrumental (being able to design that reality). Psychology (a word replaced philosophy in this special area – see Ikonomou) was providing grounds for aesthetic laws of pure visibility and empathy, and later attempts for a reconciliation of history, philosophy and theory of art. At the same time Phenomenologists were creating a theory of space which was founded on the notion of living body, as

opposed to describing it through objects/forms floating in geometric space which is described analytically.

If we think the second half of the 20th century, especially the final decades, what we come across as major problems are the ones dealing with representation and rigidly structured world images, which were placed in theory through the modern efforts. As opposed to systematic side of architectural design, there have been ongoing discussions especially raised with deconstructive discourse in the 90es, that questioning the institutionalised structures within philosophy related to architecture. They are originated from either architecture's way of establishing concrete structures or metaphors to do with architectural elements.

1.2 Structure of the Dissertation

Ludwig Wittgenstein's assertion "A good comparison refreshes the understanding" is reminded and found valid for Hans Blumenberg (1997) for his own accounts. Refreshment itself is here a metaphor, standing in opposition to an equally metaphorical exhaustion: the comparison shows more than is already contained within what it is selected for.

Therefore, this dissertation begins with a comparison of two important names, Kant and Heidegger, in relation to the criticism of modernity in general, and geometry's role in it in particular. In this respect, the problems are generally related to representation and the nature of design.

For the reasons explained in above sections Modernity and its further criticisms, existing with some similar points in philosophy and architecture, focusing on issues especially relating to how to look at perception, i.e. world view changing from schematic/geometric to whole body's involvements, how perception evolves from early Modern period, as early as Immanuel Kant, to 20th century discussions on phenomenology and taking this line to topics relevant to language and metaphor seems valid.

Even though physics, mathematics, psychology, sociology and other disciplines are also interested in the topic with regards to their own nature, this dissertation mainly deals with what has happened in philosophy and architecture, and chooses comparisons between Kantian and phenomenological approaches.

Therefore the methodology is somewhat close to “Constant Comparison” of social sciences, (Strauss, 1987), but mainly having a “hermeneutic” nature in reading relevant texts which includes different layers of interpretation of text. Knowledge is constructed as we construct meaning of text. Considered the period it evolved and the stages it has gone through definitely relates to “heuristic” attitude as well (Moustakas, 1990, 1994) which emphasises the effects of research experience on the researcher-personal experience of the research. Relating to how this affects me as researcher, it is much like phenomenological analysis, but even more focused on the researcher's experience.

After this comparison of two major philosophical interests, some previous and contemporary approaches regarding these problems will be discussed. The changes happened in the last half of the 18th century in the theories of architecture, especially Descartes’ influence on the members of French Academy will be emphasised. Contributions of architects’ from the German speaking countries and their conscious efforts in combining views of aesthetics, which was not very long ago started to be considered as a separate discipline in philosophy, constitute some of the arguments of the 3rd chapter. Opposing the method of linear perspective in Renaissance, introduction of orthogonal perspective and its use in later centuries seems to be an important issue. Together with all these, new geometrical applications into both solutions and project representations in the 18th and 19th centuries will also be dealt with. So it might become possible for us to be able to trace the beginning of modern architecture, especially in theory, back to some centuries earlier according to the topics interested.

Especially in art, the early 20th century saw a number of energetic efforts to break the perspectivity and reinvest the space of daily reality with its phenomenal richness. Cézanne’s paintings represent the primacy of perception over the conventional scientific perspective. Cubist space makes an ideal vehicle for the works of metaphoric content. The works of Surrealism affirmed the imagination and enclosed metaphoricity as a matter of their own basic creation.

Some remarks of Kant, in relation to aesthetics and art, corresponds to some issues to do with modern art and Bauhaus’s approach to architecture. These relations will be specified within the sections dealing with early 20th century. There will also be

special interest in the understanding of the spatiality of human being in the world on the basis of phenomenology and regarding architectural space as a situational phenomenon.

Within the interests of the 20th century, geometry has sometimes appeared dominantly in structural solutions as it happened in the past, but in quite creative and technologically advanced ways as in the example of Fuller's domes. Interest in rigid formal configurations, metaphoricity, and dynamic situational solutions in architecture took several different paths. For example, Eisenman takes an interesting approach in describing line as vector, and tries to include temporality aspect in the product which is not more important than the designing stage which he calls an 'end-game'. To what extent the problem of coinciding those contrasting paths has been achieved in architecture and its theory is a major concern, and it is believed in this work that a comparison of early modern and criticisms of it sometimes appearing as phenomenological evaluations has some value in this respect. As often individually focused questions of architectural forums, form, geometry, metaphor and situational phenomena are combined considerations, these issues are actually inseparable as opposed to what some theoretical works that attribute different priorities to them have tried at different times.

It became more open with deconstructive discourse that philosophy seemed to have needed the architectural figure or structure or foundations or inside-outside relations for its thinking in the first place, then, realising the constraints brought by architectural structures philosophy reoriented towards displacement, destruction and deconstruction of this figure.

The argument is on the role of geometry in modernity and its criticisms, and involves in the conflict between visual demonstrations, schematizing and metaphor. Investigating the connections between the major changes of geometry, which is used by science and architecture to some extent, is necessarily a matter of concern. In addition to these, as the two major areas of interest in architecture the evaluation of arguments over geometric and metaphoric representations are necessarily to be discussed. Whether to use the word representation, considered issues related to phenomenology, or to delve into a different type of search to discover the authentic situation and disclosing properties of architectural space will be emphasised; the differences will also be pointed out while trying to judge issues of spatial perception.

It is important for this study to make some comparisons between the world view of the period of interest, particularly perceptual models established in the era, and the systems of representation chosen in the time. It seems topics of perception and representation are usually discussed without thinking of each other, and this study wants to show the underlying relations between them.

This first chapter (introduction) wants to give the outline and conditions of the period called Modern in a wider and more general scope than architecture only. What we call modern period in architecture usually refers to the early periods of 20th century, however it is going to be necessary to start from the 18th century if we want to follow the continuing line of philosophical movements called Modern. It should be obvious for us all that this is a continuous tendency even could be referred back to some of Plato's acclamations, but it became necessary to wait until Descartes to declare "I think therefore I am" to draw the strong line, which clearly separates human brain's rationality and leaves referancing to God as the real source for our thinking. The sections, 1.1 and following 1.2., will therefore try to establish a wider look on some issues preparing the period and problematic statements caused by pure Modern systems in world view, in architectural representation and understanding architectural space correspondingly.

The second chapter considers the arguments in philosophical area and aims at examining Kant's ways of dealing with space and geometry, as well as art and to some extent architecture through schematization. Being the pioneer of separation between religious issues and philosophical arguments he deserves to be treated in great care. He is the main inspiration, especially for the art historians reflecting the attitude followed by Pevsner, who is the establisher of Neo-Kantian look into architectural issues. Therefore, Kantian impacts on architectural history, has actually showed a long lasting effect than most of us may have noticed before. Kant deserves a closer interest from architects, but proving himself being a notoriously difficult writer to follow without a guide/supervisor from philosophy, he escaped from most architects' attention.

Kant's understanding of subjectivity, which is the preference of a universal subject whose main property is rationality, and Heidegger's of Dasein, makes it clear that these two thinkers constitute two far ends of a line. Nevertheless, it is perhaps possible to claim that Heidegger's criticism of Kant, is the reason of some of his own

works' being produced: he criticises Kant to be able to express the validity of his own thought in many of his pieces, probably most clearly in the "Kant and the Problem of Metaphysics". Actually Kant is versatile, focusing on many different topics, including transcendental idealism, ethics, transcendental aesthetics, even though he is the one who makes himself difficult to be understood, he successfully describes such a system that covers as many questions as possible and for him without any failure. That is why we need to have a look at his system and its far reaching aspects till 20th century. Heidegger is also wide in his interests, a bit discouraging at first glance perhaps but above all lending quite a few topics to architecture.

Besides their dominant roles in philosophical arguments, Kant and Heidegger have provided architects with ideas which have been incorporated into architectural discussions. To summarize the content of the second chapter, the dissertation will emphasise the way in which the roles of intuition and imagination occupy different places in Kant's central arguments on subjectivity and also be questioning the states of being a receiver and an active designer of space through the eyes of an architect, as well as the changing roles of geometry in relation to Kantian and Heideggerean approaches. For this purpose, a focus on early Heidegger of Being and Time -to read his initial approach to metaphysics, 'spatiality' and 'world'-, as well as his post-war comments on building issues are truly essential.

The third chapter deals with problems related to spatial perception, architectural representation and issues of disclosing the authentic nature of architectural space, as phenomenology would be interested to show, and the relation between models of perception and architectural representation. Theories of perception even today seem to be deeply affected by Kant's systematic approach that we find schematic perception theories which experiences of whole body in space has not occupied much place. Therefore, phenomenology's dealing with spatial perception; especially through bodily involvements constitutes the other end in these arguments. This dissertation tries to prove that, the theories of spatial perception usually go parallel with the techniques used for architectural representation (even though we cannot call it representation, but disclosing the authentic nature from the phenomenology's point of view), in the same era. This relationship has usually been neglected because the two issues are usually examined by different people in different type of studies.

Architectural representation is a wide issue and its problems are not solely based on geometric projection systems we use in most architectural drawings of orthographic nature. But it involves dynamic systems which could include some aspects of linguistic discussions.

The fourth chapter aims at clarifying the nature and position of metaphor in architectural theories in relation to philosophical ideas that is on metaphor. Description of metaphor, its dynamic nature and whether it is a solution to the search for non-geometric explanations of spatial decisions are among the issues of the fourth chapter.

Last chapter will provide a short summary of main line discussions included. Contemporary arguments and comments on the nature of home, atopic spatiality, unmapable territory in theory, and questionings on the classifications of geometrically describable and metaphorically representable are all relevant and will benefit from arguments contained in this study. Becoming of a town as-living-being, may constitute a new line in the generally accepted view that Heidegger is an anti-city thinker. It is possible to overcome this being 'anti' remembering that it does not fully correspond to the thinker's views on 'becoming vs Being', finitude, possibilities and 'throwing oneself' towards them, 'spatiality' and of course 'equiprimordiality' of 'temporal' openings of nows. Wider explanations of these specific terms will also be found in sections on Heidegger in general.

Main results of the research of schematization, where and when it originates and Heideggerean approach in metaphor as displayed by Ricoeur is also summarized in the last chapter.

2. A CRITICAL INQUIRY OF TWO OPPOSING PHILOSOPHERS: KANT&HEIDEGGER

2.1 Immanuel Kant

The main aim of this chapter is to examine the characteristics of the Kantian 'subject', and how this subject relates itself to the 'world'. This examination will be focusing on the extent of the unity in the subject's receptive and productive states in relation to space, geometry, beauty and pure form, bearing in mind that these are threads linking Kant's philosophy to the concerns of architectural design. The relevant period is mainly Kant's critical period with the inclusion of his Inaugural Dissertation which constitutes the transition from precritical to critical philosophy.²

2.1.1 Phenomena and Noumena : The World As 'Sensible and Intelligible'

In the work which is known as his Inaugural Dissertation (ID) - the full title of which is "On the Form and Principles of the Sensible and the Intelligible World", and which dates from 1770 - Kant presents a doctrine of two different kinds of knowledge, and two distinct capacities of the mind; one is the capacity of being affected by the outside world and the other is spontaneous thinking.

Kant takes up a Platonic approach here, in describing the world as sensible and intelligible. Sensibility is the receptivity of the subject, and the sensible (phenomenon) impinges upon it. The intelligible (noumenon) is "that which contains nothing save what must be known through intelligence" (ID, p.392), and "intelligence (rationality) is the faculty of the subject through which it is able to represent things which cannot by their own nature come before the senses of that subject" (ID, p.392).

² Unless otherwise stated the quotations in this chapter and in the following chapters are from the translations of "The Critique of Pure Reason" by Norman Kemp Smith, and "The Critique of Judgement" by James Creed Meredith. For "The Inaugural Dissertation" the references will be made to the Lewis White Beck's edition of "Kant-Selections".

Even if they are 'abstracted' these empirical concepts would never get to the level of the intellectual and do not "pass out of the species of sensitive cognition" (ID, p.394) even though they are the only providers of data for intelligence.

In his descriptions of matter and form, Kant refers to 'matter' as sensation, and 'form' as the general configuration of sensible things occurring when a certain natural law of the mind coordinates the sense-data (ID, p.392,393). So, 'form' can only be intellectual! This is important with regard to the artistic representation of the period, which will be returned to later in this dissertation.

Although Kant separates the intelligible from the sensible world, he actually sees it as a whole: "A principle of the form of the universe is one which contains the ground of a universal connection, whereby all substances and their states belong to one and the same universal whole, which is called a world... A form of intelligible world recognises an objective principle... But the world insofar as it is regarded as phenomenon, acknowledges no principle of its form except a subjective one" (ID, p.398).

In this work, Kant does not clearly explain how this universal unity is established, but later in his third critique this unity constitutes the main theme, and it is considered from a different point of view which had not been elaborated in detail at the stage of the Inaugural Dissertation.

As will be seen, especially in Chapter 2.1.2, Kant was later to give a much more detailed and sophisticated explanation of the subject and what he here simply calls the 'intelligence'. But it might be important to look at an initial stage at this point for a number of reasons. Firstly, it is helpful to distinguish the special position of sensibility, - which will later be technically called intuition - in the arguments about 'unity'. Secondly, we should recognise that (even if it will later be depicted as several faculties) thinking is one whole intellectual case which is seen to avail itself of the opportunity of purifying itself by having only a restricted contact with the senses.

It should be remembered that, even after fully developing his 'transcendental idealism' in the first critique, Kant was to refute empirical, or in his own words, 'material' idealism and try to ground his theory on 'experience', which can be outer as well as inner. In the following sections on intuition and space, this point is to be clarified in detail.

2.1.2 'The Unity' of the Synthesis and of the Subject

At a very general level, it is possible to say that in his three critiques Kant deals with, respectively, the conditions of knowledge and self-consciousness, morals, and aesthetics.

The question of a subject having self-consciousness without referring to any other objective source outside itself, has been important in modern philosophy. In the first critique Kant tries to give a full picture of a subject carrying out a synthesis which has the unity of all faculties serving for our knowledge.

In the area of sensuousness the subject is determined by the laws of nature, though these laws are given to nature by the subject itself. However the subject is also a free agent, as this constitutes the main area of interest of "The Critique of Practical Reason". In "The Critique of Judgement" Kant tries to reconcile the separation between the subject as a free agent and nature, through the work of art.

The system of thinking that Kant tries to demonstrate seems to have a linear structure, or in Kant's own description, often alluded to in contemporary writings, it is like an 'edifice' having solid foundations on which it rests firmly.

In "The Critique of Pure Reason", the initial three faculties of this structure play an important place in the main questions such as how synthetic a priori judgements are possible and how the unity of this synthesis itself can be constituted. The arguments about these three faculties will also have a place in the chapter on Heidegger, since he brings out some points in his own philosophy through his arguments with Kant. Considering the limitations of this dissertation, the following sections will offer a restricted examination of these faculties, namely intuition, imagination, understanding. The lengthy part will obviously be intuition in view of the fact that 'space' is a pure form of it.

Before going into the details of intuition, the first question to ask might be: what sort of a subject possesses this intuition? Described briefly, this subject spontaneously has a 'synthetic unity of apperception'. Kant gives this unifying role to two different faculties in two different versions of "The Critique of Pure Reason"; to imagination in the first, and to understanding in the second. The faculty of imagination will be examined later on in this dissertation. His later approach to 'unity' is the main concern here. Kant says "All combination is an act of the

understanding... Combination is representation of the 'synthetic' unity of the manifold. The unity, which precedes 'a priori' all concepts of combination, is not the category of unity;... the category already presupposes combination" (CPR, p. B 130,131).

This is fundamentally different from Descartes's body and mind distinction. For Kant "it must be possible for the 'I think' to accompany all my representations; for otherwise something would be represented in me which could not be thought at all... this representation is an act of 'spontaneity', that is, it cannot be regarded as belonging to sensibility. I call it 'pure apperception'" (CPR, p. B 131,132). Kant sees the 'transcendental' unity of self-consciousness indicating the possibility of 'a priori' knowledge arising from it. And "... the synthetic unity of apperception is therefore that highest point, to which we must ascribe all employment of the understanding, even the whole of logic, and conformably therewith, transcendental philosophy. Indeed this faculty of apperception is the understanding itself" (CPR, p. B 134). So, through understanding, the subject conjoins one representation with another while being conscious of their synthesis. How these representations become available for understanding is through intuition which will be considered now.

2.1.2.1 Intuition

English uses the technical term 'intuition' to translate German word 'Anschauung'. The word has multiple senses which are not always clear: the word 'anschauen' simply means to 'look at'; its philosophical significance is a major theme of German philosophy of the period (Bowie, 1993, 2003).

In "The Critique of Pure Reason", Kant describes 'transcendental aesthetic' as the principles of 'a priori' sensibility, and in this context the word aesthetic has nothing to do with art or beauty in the way we understand it today. Kant's main concern here is how sensibility makes 'a priori' knowledge possible. Intuition is the status which provides the subject's relationship with the world in an immediate way. It is the source of human knowledge. In the section on the "transcendental aesthetic", as it was described in "The Dissertation" (ID, p.397), intuition is passive and it takes place "only in so far the object is given to us" (CPR, p. A 19, B 31).

The subject's relation to the world through its sensations makes the intuition 'empirical', and the undetermined object of empirical intuition is called 'appearance'. What corresponds to sensation in the appearance is its 'matter', and it can be given "a posteriori" only (CPR, p. A20, B34).

But 'form' of appearance cannot itself be a sensation because in the mind sensation is ordered in certain relations to be determined as something. So, 'form' must already be present 'a priori' in the mind to allow sensations to be matched with it, and it must be categorically distinct from sense-data.

Kant introduces 'pure' intuitions as found in the mind 'a priori' and having nothing sensuous in them. So intuitions, which were received through the senses as 'empirical', can become determinable, first by finding their 'a priori' forms, and then being 'thought' through the understanding, which makes the 'concepts' arise. So, what Kant calls transcendence is strictly related to the status of intuition as its first stage.

Therefore, it is through intuition that 'inside and outside' relate to each other. Here, the role of intuition is seen to be passive when it is empirical but is debatable when it is pure. Although it appears to be the stage where its pure forms can exist 'a priori', it must also have an active role in order to be able to abstract matter into another format, thus allowing it to be matched with form at another stage of the synthesis (See 'Chapter 2.1.2.4 Schematism' for more detail). What is happening in intuition is a complete isolation of what is sensible. For Kant intuition's role here is the conversion of the contingent sensible into a pure form, having 'a priori' principles, and only in this way can it be ordered as thinkable.

Eventually, Kant declares 'space' and 'time' to be the only two forms of sensible intuition, and these forms serve as principles of 'a priori' knowledge (CPR, p. A 22, B.36). An object of the senses cannot be conceived if it is non-spatial and non-temporal. So, intuition is the stage which gives the sensations spatiality and temporality. Space and time can therefore only be subjective. "...if the subject, or even only the subjective constitution of the senses in general be removed, the whole constitution and all the relations of objects in space and time, nay, space and time themselves would vanish" (CPR).

As I will discuss in more detail in the following section, space is the outer form, and time is the inner form of pure intuition. Kant simply separates intuition and the form of intuition like this: "... that which, as representation, can be antecedent to any and every act of thinking anything, is intuition; and if it contains nothing but relations, it is the form of intuition" (CPR, p. A 49, B 67).

But if there is nothing empirical in a form of thought, it is possible to conceive it even though it is non-spatial and non-temporal. This happens through the understanding. The argument about conceiving non-spatial and non-temporal forms of thought takes different shapes in "The Critique of Pure Reason" and in "The Critique of Judgement" (CJ).

In the first critique, Kant insists on 'representation' in respect of mathematical and physical principles; he claims that otherwise they will not have objective validity, and their content will be completely devoid of meaning (CPR, p. A 239-242, B 298-301).

But, when Kant discusses the 'beautiful' and the 'sublime' in the third critique, he takes up a different approach. As will be examined in the following sections he talks about sublimity as being "with no sensation as the material of its aesthetical judgement" (CJ, p. 226). (Here aesthetical does not have exactly the same meaning as it has in the first critique.) "The sublime, which can only emerge in relation to nature, does not represent ideas sensuously, it merely points to the limitations of sensuous representation" (Bowie, 2003).

Whatever happens, Kant always rejects the possibility of 'intellectual intuition'. This would shake, or actually ruin the strong foundations of his 'edifice'. "The whole difficulty is as to how a subject can inwardly intuit itself... The consciousness of self (apperception), is the simple representation of the 'I', and if all that is manifold in the subject were given by the 'activity of the self' the inner intuition would be intellectual... If the faculty of coming to consciousness of oneself is to seek out (to apprehend) that which lies in the mind, it must affect the mind... since it then intuits itself not as it would represent itself if immediately self-active, but as it is affected by itself, and therefore as it appears to itself, not as it is" (CPR, p. B 68,69).

2.1.2.2 Space

As mentioned above, Kant describes the two pure forms of intuition as 'space' and 'time'; the former is the outer form, the latter is the inner form of intuition. I will not discuss time in particular detail here, but in the next section of this dissertation, it will be dealt with up to a certain level in relation to the faculty of imagination.

In the first critique space is described as what provides us with the cognition of outer objects or bodies according to their relation to each other under the principles of geometry. Time can be represented arithmetically, and it makes it possible for us to conceive the simultaneity or succession of the outer events and our inner states. In the precritical and critical periods, Kant's approach to space differs a great deal. The purpose here is not to examine his precritical approach in detail but to give a very general outline of it.

In the earlier period, Kant tries to reconcile Leibniz's and Newton's doctrines of space through Hume's scepticism (Ikonomou, 1992). Until 1768 Kant bases his writings on the concept of relative space. In his work entitled "On the First Ground of the Distinction of Regions in Space" (Handyside, 1982) having rejected the relational theory, he moves towards the position that space is absolute under the influence of Euler. In doing so he treats space as pure intuition rather than representing the relations of objects and bodies in themselves as is the case in physics. This shift turns upon the argument known as "incongruent counterparts" which he refines further in his "Inaugural Dissertation".

The typical demonstration of this argument is via the left and right hands or similar geometric shapes from the opposite hemispheres: "... if we take solids completely equal and similar but incongruent, such as the right and the left hands (so far as they are conceived only according to their extension), or spherical triangles from two opposite hemispheres, although in every respect which admits of being stated in terms intelligible to the mind through verbal description they can be substituted for one another, there is yet a diversity which makes it impossible for their boundaries to coincide. It is therefore clear that in these cases the diversity, that is, the incongruity, cannot be apprehended except by a certain pure intuition" (ID, p.403).

With this shift, Kant seems to have successfully based his search for a synthetical method for metaphysics, like mathematics, on pure intuition. For him "geometrical evidence is the model for, and the means of attaining, all evidence in the other sciences" (ID, p.403). Here geometry becomes the only way of demonstrating pure intuition to the senses. To Kant this is what gives scientific viability to metaphysics: "For since geometry contemplates the relations of space, the concept of which contains in itself the very form of all sensual intuition, there can be nothing clear and evident in things perceived by outer sense except through the mediation of intuition which that science is occupied in contemplating. Furthermore, geometry does not demonstrate its universal propositions by thinking the object through a universal concept, as is done in the cognitions of reason, but by submitting it to the eyes in a singular intuition, as is done in sensitive cognitions" (ID, p.403).

The basic descriptions of space and time given in "The Inaugural Dissertation" prepare the way for their later presentation in "The Critique of Pure Reason". The Dissertation's main points on space are, in brief, as follows: Space is not abstracted from outer sensations; it is a singular representation, and a pure intuition; it is not objective and real, but subjective and ideal; and it is the foundation of all truth in outer sensibility (ID, pp.402-406).

In "The Critique of Pure Reason" Kant reorganises his explanations of space in relation to metaphysical and transcendental terms. According to metaphysical expositions:

1- Space is not an empirical concept which has been derived from outer experiences. Therefore the representation of space cannot be empirically obtained from the relations of outer appearance; instead this outer experience is possible only through that representation (CPR, p. A 23, B 38).

2- Space is a necessary 'a priori' representation. We can never represent to ourselves the absence of space. It must therefore be regarded as the condition for the possibility of appearances, and not as a determination dependent on them (CPR, p. A 24, B 39).

3- Space is not a general concept of the relations of things but a pure intuition: Firstly, if we speak of diverse spaces, we mean only parts of the one and the same unique space. Secondly, these parts cannot precede the one all-embracing

space, they can be thought only as in it. Therefore the general concept of spaces depends solely on limitations (CPR, p. A 25, B 39).

4- Space is represented as an infinite given magnitude. The original representation of it is an 'a priori' intuition, not a concept (CPR, p. A 25, B 40).

Under the transcendental expositions, Kant mentions geometry as a science which determines the properties of space synthetically, and yet 'a priori' (CPR, p. A 25, B40). After this he emphasises the fact that space is a subjective condition of sensibility, under which alone outer intuition is possible for us. What he especially stresses is that space can contain 'a priori' principles which determine the relations of outer objects, but it does not represent them in relation to each other, because these objects cannot be intuited 'a priori', and of course space does not represent things in themselves (CPR, p. A 25, B 40,41). What space can contain is the synthetic 'a priori' principles of geometry which can be applied to the relations of outer objects. Thus, subjective space gains objective validity, because geometry has its origin in 'a priori' intuition, which cannot be derived from judgements of experience.

And through geometric representation, that which is originally sensible can be demonstrated in a commonly shared way. Through 'a priori' forms the 'individual and sensible' is invalidated; it is turned into the 'subjective and ideal', and through the representation of what is 'a priori', 'ideal' can have 'real' demonstrations. The way Kant explains this is by using the word 'limitation': "For we cannot judge in regard to the intuitions of other thinking beings, whether they are bound by the same conditions as those which limit our intuition and for us are universally valid. If we add to the concept of the subject of a judgement the limitation under which the judgement is made, the judgement is then unconditionally valid... Our exposition therefore establishes the 'reality', that is, the objective validity, of space in respect of whatever can be represented to us outwardly as object, but also at the same time the 'ideality' of space in respect of things when they are considered in themselves through reason, that is, without regard to the constitution of our sensibility (CPR, p. A 27,28, B 43,44).

In "The Critique of Judgement", Kant was to term this type of judgement 'determinant' in order to bring out the point that it subsumes the particular under the universal laws given by understanding. (The other type of judgement was to be

named 'reflective'; it moves from the particular to the universal.) This topic will be returned to in the section on the faculty of judgement.

In the first critique, time is the relations of representations of our inner states which are also capable of being expressed in an outer intuition. "We represent the time-sequence by a line progressing to infinity, in which the manifold constitutes a series of one dimension only... While the parts of the line are simultaneous the parts of time are always successive" (CPR, p. A 33, B 50).

It should be born in mind that, one step before this, in "The Inaugural Dissertation" he talks about three dimensions as limits in space, with space considered as a continuous quantum (ID, p. 403). In the same dissertation he regards time as a continuous quantum, too, and claims that "the simples which exist in time, namely moments, are not parts of time, but limits between which there is a stretch of time" (ID, p. 399). He attributes the concept of limit only to space and time: "The concept of limit has no application to quanta other than space and time" (ID, p.403). Kant assigns great importance to measurability since in this way we grasp the physical reality of the outside world.

The point here is that ideal space does not have any 'scale', or measurable dimensions, and especially 'depth', whereas real space does have them. The problematic of the representation of real and ideal space has given rise to many arguments all through the history of art and architecture. The limitations of this dissertation compel us to narrow the argument down to the architectural design process in relation to the way space is treated in Kant's transcendental idealism.

The main arguments on space, including the above, will be considered in relation to architectural design in the concluding part of this dissertation. I will move next to the faculty of imagination, which is the most relevant place to discuss the inner intuition.

2.1.2.3 Imagination

Kant assigns two different roles to the faculty of imagination in the two different versions of "The Critique of Pure Reason". First he treats imagination as a combinative faculty in between intuition and understanding, and regards it as capable of reproducing the objects of intuition even if they are not present. This faculty, on it is own, can produce images retrospectively, and probably into the

future, too, if it is a case of the subject's movements alone; this seems implicit in Kant's given example of drawing a line and being aware of the possibility of drawing it to infinity (CPR, p. A 101,102).

But in the second version of the critique, he gives the duty of synthesising what is given by intuition to both imagination and understanding, though in differing ways. What he calls as 'figurative synthesis' is carried out by imagination, which is the synthesis of sensible intuitions and it is necessary 'a priori' (CPR, p. B 151). Through this 'transcendental synthesis of imagination', it is possible to represent objects in intuition which are not themselves present. Kant thinks the 'reproductive' imagination is subject to empirical laws and does not contribute to the possibility of 'a priori' knowledge (CPR, p. B 152).

He distinguishes this from the 'intellectual synthesis' carried out by the faculty of understanding, which occurs "in respect of ... intuitions in general" (CPR, p. B 150). Here imagination is called 'productive', not 'reproductive'; because it is spontaneous, not subject to empirical laws. In this case the synthesis of intuitions is 'a priori', and they conform to the 'categories' of understanding. This is described as an action of the understanding on sensibility (CPR, p. B 152).

The "action of the understanding on sensibility" would mean that the understanding is able to determine sensibility inwardly. "Thus the understanding, under the title of a 'transcendental synthesis of imagination', performs this act upon the 'passive' subject whose 'faculty' ... that inner sense is affected" (CPR, p. B 153,154). Kant describes inner sense without combination but only as containing the mere form of intuition. Determinate intuitions could only be possible through the consciousness of this determination, and this would require the transcendental act of imagination under the influence of the understanding.

The second version of the critique gives the understanding a manipulative power over the act of imagination, but does not dismiss it. This constitutes an important point in Heidegger's arguments on Kant which will be dealt with in the second chapter.

Through this manipulated act of imagination, the representation of space and time becomes possible. Kant focuses on the 'motion of the subject' to show how

we get to the 'determination' of the inner sense by synthesising the manifold in space. Firstly, by producing the concept of succession which implies the capability of representing future as well as present and past - this is to do with time's being an infinite given magnitude like space, even though this infinite character does not show itself in the given object - and secondly, by abstracting from the concept of succession - as a determinative act - to arrive at the form of the 'inner' sense (CPR p. B 154,155). What can be said here about the representation of future images is, as it was in the first version, again fully dependent on the subject's awareness of inner sense. And Kant explains that we would not know whether the other objects move under the influence of any other forces or by themselves, so we cannot judge this 'a priori' for outer entities but only for ourselves, and when motion is "considered as the describing of a space... by means of the productive imagination, ... belongs to geometry" (CPR, p. B 154,155).

But for Kant, as far as inner intuition is concerned, we know our own subject only as appearance because we are inwardly affected by ourselves. He gives the act of 'attention' as an example of this, and says "in every act of attention the understanding determines inner sense" (CPR, p. B 157). On the other hand, in the transcendental synthesis of representations in general, which is spontaneous, the subject knows itself not as an appearance, nor in itself, but as it is. "This 'representation' is a 'thought', not an 'intuition'" (CPR, p. B 157).

2.1.2.4 Schematism

Kant explains further details which are relevant to both figurative and intellectual synthesis under the title of 'schematism', where he mainly deals with how inner representations of outer objects can be 'homogeneous' with the pure concepts of the understanding.

In Kant's description of thinking although concepts and intuition are needed together, pure concepts can never find their direct reflection in any intuition. They are distinct and quite heterogeneous. This heterogeneity requires a special 'application' of 'categories to appearances'. 'The other sciences' do not need this particular type of 'application' because they do not deal with aspects of objects which are utterly distinct and 'heterogeneous' from those which represent them 'in concreto' (CPR, p. A 138, B 177). In other words in these other sciences

the concepts through which objects are understood have points of similarity with the concepts which represent them in concrete reality.

The application happens through 'some third thing' which is intellectual in one respect and sensible in another. This is a representation called 'transcendental schema'. And time, as the connection of all representations, contains an 'a priori' manifold in intuition, and it also contains empirical representations which are homogeneous with appearances (CPR p. A 138-139, B 177-178). So through time, which is relevant to the representations of both, pure and empirical are combined under a 'schema'.

The procedure of understanding in these schemata is described as the 'schematism' of pure understanding. But the schema itself is the product of imagination. "Since the synthesis of imagination aims at no special intuition, but only at unity in the determination of sensibility, the schema has to be distinguished from the image" (CPR, p. A 140, B 179). "The 'image' is a product of the empirical faculty of reproductive imagination; the 'schema' of sensible concepts, such as of figures in space, is a product, and as it were, a monogram, of pure 'a priori' imagination, through which and in accordance with which, images themselves first become possible" (CPR, p. A 141-142, B 180-181).

Although in the second version of "The Critique of Pure Reason" Kant describes the imagination as a faculty which is manipulated by the understanding, in the same version he still maintains that the schema, which is a product of imagination, will connect multiple representations in inner sense 'a priori' with a concept in conformity with the unity of apperception (CPR, p. A 142, B 181).

For Kant the pure image of all magnitudes for outer sense is space, but pure 'schema' of magnitude is 'number'. Therefore number is "the unity of the synthesis of the manifold of a homogenous intuition in general, a unity due to my generating time itself in the apprehension of the intuition" (CPR, p. A 142-143, B 182). And further, examining the schemata of categories, we see that "each category contains and makes capable of representation only a determination of time" (CPR, p. A 145, B 184). Thus, the emphasis on time attains such a high level in Kant's system that it leads to the conclusion: "... indirectly the unity of apperception ... corresponds to the receptivity of inner sense" (CPR, p. A 145, B 185). In this respect, first it seems that sensibility outweighs the understanding, because it has the

capacity of constituting the limits of concepts. The schemata are both what realises and restricts the categories, but they cannot be predominant. Because, even though Kant says the schema is the product of 'a priori' intuition, he also says that the schemata can represent things only 'as they appear' (CPR p. A 147, B 186), whereas the categories need a wider meaning, and a wider application. This would lead to other arguments, and Heidegger takes this point further in his "Kant and the Problem of Metaphysics", to the stage of asking whether the transcendental function of time or space comes to the fore, or space can enter into the transcendental schema.

For Kant, the answer is found in the understanding, where a purely logical meaning remains after the elimination of everything which is sensible. He says this signifies the bare unity of the representations. On the other hand, he repeats that "the categories, without the schemata, are merely functions of the understanding for concepts; and represent no object. This [objective] meaning they acquire from sensibility, which realises the understanding in the very process of restricting it" (CPR, p. A 147, B 187).

The argument is preferred to be left here as it is, and pursue it in the following chapter (Chapter 2.3) in relation to work of art and the sublime.

2.1.3 Judgement

In "The Critique of Judgement", Kant places judgement as a middle term between understanding and reason, claiming that it may contain in itself a specific principle of its own for seeking to establish laws, though it may be a merely subjective 'a priori' principle (CJ, p. 177). Through the faculty of judgement, Kant tries to find a reconciliation of the theoretical realm, ie understanding, and the practical realm, ie reason; all in all, a reconciliation of natural concepts and the concept of freedom.

2.1.3.1 Aesthetic Judgements

Judgement, in general, relates the particular to the universal in two different ways. In the case of 'determinant' judgement, the particular is subsumed under universal laws which are established by understanding. If the judgement is 'reflective', it produces a transcendental principle as a law by and to itself, it cannot derive this principle from experience (CJ, p. 180). "... And nature must ... be

capable of being regarded in such a way that in the conformity to law of its form it at least harmonizes with the possibility of the ends to be effectuated in it according to the laws of freedom" (CJ, p. 176).

Kant sees 'purposiveness' in nature, and says that the 'purposiveness of nature' is the ground of the unity of nature itself, and it is represented by reflective judgement, somewhat as if this purposiveness was an understanding that contained the basis for the unity of empirical laws. For him this sort of purposiveness is different from practical purposiveness, as if it was 'purposiveness without purpose', and 'beauty' "is the form of purposiveness in an object, so far as perceived in it apart from the representation of an end" (CJ, p. 236) (Quote is altered).

Therefore it is possible to say that reflective judgements are purposive, and aesthetic judgements can only be reflective, because pleasure is connected with the form of an object of intuition, and this is subjective. For Kant, "if imagination is undesignedly brought into accord with understanding, by means of a given representation, and a feeling of pleasure is thereby aroused, then the object must be regarded as final/(purposive) for the reflective judgement" (CJ, p. 190). Hence, judgement of taste may be different from person to person, and everyone's judgements in this respect are valid.

Kant tries to group this and other characteristics of aesthetic judgements under the 'moments' of quantity, quality, relation and modality. Since he considers all aesthetic experiences in relation to the unifying notion mentioned above, I will prefer to examine them without particularly dividing into these 'moments'.

But a separation between teleological and aesthetic judgements is unavoidable, since their grounds have different characters; ie the former intellectual, the latter based on feeling of pleasure. Therefore, Kant's emphasis on whether the judgement is concerned with an examination of purposes or final causes should be considered carefully. If the judgement does not refer to any concept of the understanding, ie it is based on pleasure, the judgement is 'disinterested', it is an aesthetic judgement, but it is still possible that it will be agreed by everyone, because to have pleasure from a direct contact with an object has a universal ground (CJ, p. 191). For this reason 'natural beauty' may be considered as the 'presentation' of the concept of formal, ie subjective purposiveness, and 'natural

purpose' as the presentation of the concept of a real, ie objective purposiveness (CJ, p. 193). "The result is that aesthetic judgement refers not merely, as a judgement of taste, to the beautiful, but also, as caused by a higher intellectual feeling, to the 'sublime'" (CJ, p. 192).

Although the beautiful and the sublime are both directed to the feeling of pleasure they have a major difference on the basis of having 'limitations' or not, in other words being depended on an object's form or not. Without having a certain form the sublime would directly refer to the reason. Whereas the beautiful is to be understood, even though the understanding is in a mutual relationship with the imagination for this special case. Clearly this would mean the work of art is subject to intuition first. This brings the questions about the form of representation, considering what gives the representation a special 'relation to the ends' to give us a higher pleasure.

2.1.3.2 On Fine Arts

In the context of this chapter one of the four moments of aesthetic judgement, namely relation becomes more important especially with the form of the aesthetic representation.

In this respect Kant, referring back to Euler, suggests that colour and tone may not be mere sensations, and the purity of sensation can only relate to form. For him, "in painting, sculpture, and in fact in all the formative arts, in architecture and in horticulture, as far as [they are] fine arts, the 'design' is what is essential" (CJ, p. 225).

The word design is translated as 'delineation' in White Beck (White Beck, p. 367). Considering what Kant is saying in the same paragraph for paintings etc. it is possible to think that what is translated as 'design' can be interpreted as 'drawing' here.

Kant declares all form of objects of sense as either 'figure' or 'play', and in the case of inner sense "it is either play of figures (in space: mimic and dance) [based on movements in a medium], or mere play of sensations (in time). The 'charm' of colours, or the agreeable tones of instruments, may be added: but the 'design' in the former [external sense] and the 'composition' in the latter [internal sense] constitute the proper object of the pure judgement of taste... the 'ornamentation'... is

then called 'finery' and takes away from the genuine beauty" (CJ, p. 226). These remarks show an obvious relation to Modern architecture's refutation of ornament, and including architecture Modern art's defence of 'pure form'. He further emphasises that emotion has nothing to do with beauty. Emotion is connected with sublimity which requires a different sort of judgement from one founded on taste.

For Kant sensation (charm or emotion) plays no part in the aesthetic judgement. For this reason he would regard the beauty of a building as 'dependent'. Its beauty is restricted by the concept of perfection, considering that it is built for a special purpose. 'To combine beauty with the good' (CJ, p. 230) according to its purpose would have a spoiling effect on its beauty. Purposiveness gives a delight which is based on a concept, whereas the beautiful is immediately coupled with the representation of the object. So purposive judgement cannot be free and pure judgement of taste.

It is possible that taste, through a combination of intellectual delight with the aesthetic, enables rules to be prescribed for definite purposive objects. Though these rules make the beautiful (or taste) an 'intentional instrument' in respect of the good (or reason) (CJ, p. 230). Further, Kant repeats this in a different syntax saying that free beauty passes a pure judgement of taste, the dependent beauty is applied intentionality (CJ, p. 231). Relevant to this, he separates 'handicraft' from 'art' by making it clear that the former is 'industrial art', ie combined to the productivity and a certain payment which makes it a business (CJ, p. 304). This is another issue that, even in modern times, especially in architecture and its education is still dealt with; that is the level of importance which should be given to the craftsmanship.

Kant's definition of fine art is that art is a "mode of representation which is intrinsically purposive, and which, though devoid of an end, has the effect of advancing the culture of the mental powers in the interests of social communication" (CJ, p. 306). This implies a universal communicability of a pleasure which is based not on sensation but on reflection which refers to the reflective judgement. Here we come across another important aspect of modern art, that is the universal communicability of the pleasure it gives.

This will later be interpreted in different ways and eventually underline a serious argument in art and architecture of the late twentieth century.

In this respect, genius which is described as "the innate mental aptitude 'through which' nature gives rule to art" (CJ, p.307) is a universal character as well, ie its qualities can be found in each example of it universally. According to Kant these qualities are: first, the originality of the product; second, although themselves not being created as imitations, these products' having a capacity of serving for this purpose, ie as models; third, although being incapable of explaining this scientifically during the creation of the products, genius' giving rules as 'nature'; and finally nature's prescribing rules through genius to fine art not to science (CJ, p. 307, 308). Considering the second quality, ie being models, this will mean these products can set up certain standards. Considering the third quality, ie giving rules as nature, these standards, set up by the products of genius, can be used by the others as if they were found in nature, this means there would not be a real flow of 'know-how' from genius to the others, otherwise it would be against the characteristics of 'fine art'.

It might be surprising that we see Kant complaining about the regularity of geometric forms and their constraint on the 'free play of the imagination', claiming that geometric forms refer to the concepts of the understanding and make the beauty 'dependent' (CJ, p. 240-243). This can also be connected to the 'limitlessness' of the sublime, he stresses that our imagination is capable of grasping that which is infinite, immeasurable, and indescribable (CJ, p. 257). All these comments can be taken as an emphasis on the restricted capacity of the intuition and the rules obtained in a synthesis solely relying on it. This might bring about the question whether art can be an alternative to science as a way of comprehending the world. For Kant the answer could not be yes, but in the following periods of philosophy this topic was to constitute a major issue, and be treated differently. Considering the limitations of this dissertation instead of examining the next periods in philosophy having Kant as the threshold for their arguments the preference is given to another approach which appears to be opposing transcendental idealism.

2.2 A Major Reaction in the 20th Century: Martin Heidegger

Heidegger, in short, is who clearly declared 'phenomenology' as the method for philosophy; he was a pupil of Edmund Husserl who actually first established 'phenomenology' in philosophy by focusing on the crisis of Western philosophy before 20th century.

Heidegger's way is quite different than Kant's linear system; i.e. steps following each other one after another, after each stage is completed and time is not a simple line showing past-present-future with an arrow. Neither it is circular for Heidegger. Instead he accepts timely intervals and disclosing as clearing away with a focus of everyday involvements back and forth, and 'temporality' of disclosedness. In Heidegger's own explanation: "A *circle in reasoning* does not occur in the question of the meaning of Being. Rather, there is a notable "relatedness backward or forward" of what is asked about (Being) to asking as a mode of being of being". (Heidegger, 1993)

Phenomenology calls for preobjective and for Heidegger this constitutes the horizon of dwelling in the world. "Dasein is ontologically "closest" to itself, while ontologically farthest away; but pre-ontologically it is surely not foreign to itself..."(Heidegger, 1993)

The original meaning of truth appears in phenomenology as taking beings out of concealment, letting them be seen in their unconcealment (uncoveredness). Unconcealment is original meaning of truth. This disclosedness requires some challenge though, as Being is equally in truth and untruth. (Krell, 1993)

Heidegger's work is generally grouped as his first and second period referring to his studies before and after the 2nd World War. The first period is usually focused on stating how Heidegger understands Being, in his own choice 'Dasein'. The second period's interest is more on the 'language'; as language is already there before Dasein, to cut short, in Heidegger's words "Language is the house of Being".

Heidegger 1st period

In this section, the main points in Heidegger's philosophy which he explains through his argument with Kant's views will be examined according to some basic aspects

in relation to architecture. The main arguments could be focused on time and temporality for a start to make the break from, once and for all described type of, i.e. in a way 'timeless subject', to 'Dasein' which is the description of Being in Heidegger and which opens up new possibilities to understand Being in its everyday concerns. This section will also try to deal with the persistence on 'spatiality' in Heidegger which is essentially discussed as totally different from 'space' in Kant. Additionally, Heidegger's approach to poetic images and metaphor will be important.

Heidegger's argument structure has its own peculiarity. But thinking the continuity of the argument in this dissertation, this chapter's structure will be organized in respect to the previous chapter. Therefore, here the criticism of Kant's pure forms of intuition, and imagination will occupy the main place in relation to Heidegger's approach to metaphysics and logic. This will also mean a questioning of the 'being-in-the-world' in order to be to grasp Dasein's spatiality and temporality.

2.2.1 Being-in-the-world

Considering these issues, to get the sense of the unique expression 'Being-in-the-World', the period of interest will mainly be kept limited to Heidegger's 'early' period. The texts will mostly be chosen from this period's several lecture books, like "The Basic Problems of Phenomenology", "Metaphysical Foundations of Logic", and of course "Kant and the Problem of Metaphysics" as well as "Being and Time" constituting the spine of the information on this period of Heidegger. References related to these texts will be given with Heidegger's own numberings as page numbers in this chapter. Explanations in Being and Time on 'world' and 'spatiality' are usually not popular among architects who deal with Heidegger, as it has been seen many works usually refer to "Building Dwelling Thinking", "Man Dwells Poetically", "The Origin of the Work of Art", i.e. lecture notes usually. But Dasein's spatiality and wordliness are basic issues that he, of course, started to ground much earlier and explained in detail with other aspects of Dasein.

Metaphysics as Foundations

In order to see the two different directions shown by Kant and Heidegger and to be able to get the gist of Heidegger's phenomenological approach, to see how the two words; 'metaphysics' and 'logic' have been replaced as the predicate and object of the same sentence in these two philosophers. As it was shown in the first chapter, Kant tries to establish strong foundations for metaphysics. He claims that this is possible only if it has a synthetic method (CPR), like mathematics has, instead of an analytical method. In this matter Heidegger stresses that thought advances (MFL 104etc) logic.

It is generally considered that Heidegger moves away from metaphysics in order to establish his ground for phenomenological method. A careful attention to his views in his *Kant and the Problem of Metaphysics* (Heidegger, 1990) reveals that Heidegger actually wants to remove the look to being as if being can talk about itself as an outsider, i.e. almost like an object that can be observed independent from us, and he clearly disapproves transcendentalism but explains 'Metaphysics of Dasein', as opposed to metaphysics as science.

For this reason, when Heidegger directs his complete attention to Kant, in his analysis of the *Critique of Pure Reason* (Heidegger, 1997), he aims at uncovering the ontological syntheses and puts the emphasis on the position of 'imagination' first. The problem, as Kant presents it and as it will be remembered from the previous section, is how thought relates to intuition. Thought must have the manifold of a priori sensibility as its content if it is to have meaning. Thought must therefore be able to combine the manifold of pure intuition. In order for knowledge to be possible, thought requires the synthesis of the manifold of pure a priori sensibility, and thereby the conditions of empirical sensibility (Weatherstone, 2003). Space and time must always affect the concept of the object.

Kant tells us that synthesis differs from analysis in that it does not only have *form*, but also brings *content* to concepts. Pure synthesis achieves this content by the combination of a pure manifold. Pure synthesis combines the pure manifolds of space and time, and thus gives them that *content* that they could never gain by mere analysis. In this way synthesis "gathers the elements into cognitions."

Heidegger argues that since the synthesis that is under discussion here is an act that

combines thought and intuition (the elements of knowledge), this synthesis cannot be either synthesis or reflection. (Heidegger, 1997)

2.2.1.1 Spatiality and Space

Spatiality

For Heidegger, in our daily involvements, bare space remains veiled over. What is discovered is the spatiality of the equipments, that is the place of them in totality. (B.&T., H p.136). And the totality of involvements, which belongs to the spatially ready-to-hand, gives this spatiality its unity; the spatiality that which is split into places. (B.&T., H p.137) His basic explanation for this possibility of revealing 'the spatiality of space' was undertaken on the basis of Dasein's being spatial, in view of the fact that it exists as 'Being-in-the-world'. The two main concepts which were used in the Kant chapter appear in Heidegger's discussions of spatiality, though in quite different ways from Kant. In that chapter I used the terms 'measurability' and 'incongruency'. For Heidegger, 'de-severance' and 'directionality' represent the characteristics of spatiality. 'De-severing' makes remoteness disappear, and in this way "distances with regard to the other things become accessible in entities within-the-world themselves" (B.&T. p. H 105). Heidegger emphasises that the remoteness here is not in the sense of physical distance, even "when one is quite familiar with 'officially' calculated measures" (B.&T., p. H 106). Rather, the farness is estimated; whether this is precise or imprecise in its measurements is not the real focus.

In the everydayness of Dasein the distances have their 'own definiteness' which is thoroughly intelligible, and this coincides with the remoteness or closeness of what is ready-to-hand within-the-world. So, the closest may not be at the smallest distance. In this case instead of any objective measuring devices one would use seeing and hearing. But this does not necessarily mean that we cannot employ devices of this sort, ie things other than the body itself. Because daily-used equipments have an 'inconspicuousness', ie. insignificance, in their proper contexts, eg. a telephone receiver.

For architects, drawing implements have such a character up to a point; although using a ruler will definitely mean using an objective mode of measurement, it is done in such a casual way by architects that this shows how objective measuring

itself becomes relatively 'inconspicuous'. "Occupying a place must be conceived as a de-severing of the environmentally ready-to-hand into a region which has been circumspectively discovered in advance" (B. & T., p. H 107).

Therefore, Dasein's understanding of being 'here' is different from the geometric description of this specific place. It is rather the 'the environmental yonder'. This is something essential for Dasein: "Dasein is essentially de-severance that is, it is spatial... Dasein is spatial in that it discovers space circumspectively, so that indeed it constantly comports itself de-severantly towards the entities thus spatially encountered" (B. & T., p. H 108). The other concept which Heidegger employs in relation to spatiality is 'directionality'. He says every bringing close has had a direction in advance.

Therefore, directionality as well as de-severance are guided beforehand by our concerns. Here, he is more concerned about the foundations that Dasein has with Being-in-the-world, unlike Husserl's phenomenology based on 'bodily nature'. Bringing to mind the example of gloves for left and right hands, he claims that there are no left or right-handed hammers. This reminds us of the argument on incongruent counterparts which was Kant's main proof of space's being a pure intuition. Heidegger clearly expresses that he is not giving priority to this aspect, although he recognizes its place in the discussions about space. However, referring to Kant, he says that "By the mere feeling of a difference between my two sides I would never find my way about in a world ... whenever Dasein has such a 'mere feeling', it is in a world already 'and must be' in it to be able to orient itself at all" (B. & T. p. H 109). Here, Heidegger is both in favour of Kant and points up his inadequacies. He refers to Kant in approval inasmuch as he did not take orientation as a 'bodily' phenomenon. But he also criticises Kant for not seeing the problematic of orientation in all its implications, and for thinking of a worldless subject with a restricted 'directionality' which was given beforehand.

Space

For Heidegger "to free entities for a totality of involvements" happens by letting them be involved, which is done by either referring or assigning oneself circumspectively. And if the act of letting something be involved at a region, and

of doing this by de-severing and giving directionality, happens equiprimordially, this will mean freeing the spatial "belonging somewhere of the ready-to-hand". Dasein is familiar with this, which also means the co-disclosedness of space (B. & T., p. H 110).

But in this disclosedness, the pure 'wherein', ie measurements etc, still remains hidden. Heidegger also says that even with an awareness of this disclosedness the worldhood still lacks the pure multiplicity of three dimensions. But when the world is discovered noncircumspectively by just looking at it, the environmental regions become neutralized to pure dimensions. (B. & T., p. H 110/113). What is seen at this point is a space description which is similar to Kant's; 'just by looking at it' corresponds to 'intuition' in Kant. Heidegger makes this more explicit by saying that places become reduced to the multiplicity of random things, and the environment becomes the world of nature. The homogeneous space of nature shows itself in such a way that the worldly character is 'deprived of its worldhood'. Though it should be made clear that in everyday life space is proximally discovered in spatiality, that is when an entity becomes constitutive we 'give it a space' or 'make room' for it. This makes possible one's factual orientation at the time, without having in view either the region previously discovered or current spatiality. So, "space is not in the subject, nor is the world in space. Space is rather in the world" (B. & T., p. 111). With Being-in-the-world Dasein is spatial, therefore space shows itself 'a priori' whenever ready-to-hand is encountered environmentally. Then, if it is hidden ie everydayness, when can the homogeneous space be discovered?

This happens only by the thematization of spatiality. There are some disciplines for which the theme of circumspection itself can be spatiality, ie they deal with surveying, city planning, building, etc., which involves calculation and measurement applications, in some of which there is a complete deprivation of worldhood.

Whereas it would be hard to say that architecture is preoccupied only with measurements and geometry. The activity of designing involves much more than this. Basically spatiality is conjoined with geometric applications. But at the stage of applying the project onto the plot, which constitutes a characteristically different activity from designing it, the application of

geometry together with technical skills becomes the main task. This shows similarities to technical drawing. Designing cannot be expressed by clear-cut notions even by the designer, perhaps in some ways as Kant tries to describe genius.

2.2.1.2 Time and Temporality

For Heidegger, logic had become uprooted from its source, and consequently needs to be grounded in a radical examination of the capacity of the finite subject to transcend to beings, that is, in a fundamental ontology of Dasein.

Heidegger criticizes Kant's second interpretation of Critique of Pure Reason, as he attributes the unity of the synthesis to 'understanding', and he tries to secure a new basis for the principal concepts of ontology, the categories, through seeking their original union with intuition, specifically the intuition of time. Heidegger attempts to show that our fundamental faculties of thought and intuition are rooted in the transcendental imagination. This imagination is itself an originally conceived time, or temporality. Heidegger tries to demonstrate this common root of our faculties by showing how our receptivity has an element of spontaneity, while our spontaneity has an element of receptivity. Throughout the interpretation, the role of freedom in transcendence is pursued as a subsidiary theme.

In the first way of the Transcendental Deduction, Kant first demonstrates that consciousness of representations implies the *unity* of that consciousness, since representations can be represented as in connection only in a unified consciousness. While Heidegger acknowledges the importance of the unity of consciousness, he sees this claim as largely being an indication of the temporal finitude of man.

Time as a priori is as self-approach and at the same time autonomy, pure original receptivity and original spontaneity. Original temporality is that wherein the primal act of the self and its *self-approach* is grounded, and this same temporality is that which always makes possible a *self-identification* of the self. Only time gives the possibility of an "always," and only temporality (properly understood) has in itself the thorough extension out of the future over the past in the constant present (Heidegger, 1993).

Heidegger sees temporality as the unity of the self as original receptivity and original spontaneity. Temporality allows the original transcendental identification of the self with itself, and thus is the source of the identification that Kant attributes solely to transcendental apperception.

Heidegger argues that it is only because apperception is rooted in temporality that it can "always" identify itself with itself. In contrast, Kant saw the constancy of transcendental apperception as due to its timelessness.

By claiming that the relation to time is just as essential for the categories as their relation to the understanding, Heidegger has made a radical change in Kant's conception of the categories. Although for Kant the categories have an intrinsic relation to intuition, they obtain their relation to time only through the *schematism*. By claiming that the categories have an intrinsic relation to time, Heidegger has in effect collapsed the distinction between the categories and their schemata.

Heidegger has done well to emphasize the power of the imagination in bringing the conditions of our receptivity to concepts. However, largely because of his crusade against traditional logic, Heidegger blurred the role of the categories in this transcendental synthesis. It is clear that the schematized categories are involved here. However, he does not make it entirely plain where the categories fit in between the schemata and the notions. It seems generally evident that the category is identical with the schema, but the relations of these to the schema-image on the one hand and to the notion on the other are far from obvious. Moreover, Heidegger's notion of the schema-image does not clarify matters. Heidegger merely transposes Kant's distinction between the category and the schema into a distinction between the schema and the schema-image.

2.2.2 Building and Dwelling

2.2.2.1 Work of Art

In his lectures "The Origin of the Work of Art" (1935 Germany- 1936 Switzerland) Heidegger asks questions about the true nature of the art work and tries to establish a ground for art. (Heidegger, 1993)

Heidegger sees the origin of the art work as the artist himself, and the origin of the artist as art work, but art as the general source of the two. The answer to the questions of where does the art work originates from and what springs from the art work are all related to the truth as *aletheia* or unconcealment. Beings that are work of art manifest their origin in a special way, that Heidegger calls the becoming of truth.

He examines the ancient ontology regarding 'thing' as all art works, a painting, poem, symphony, etc, are things. In this respect:

- 1) The thing is a substance,
- 2) The thing refers to the unity within the mind of sense-impressions,
- 3) The thing as matter is invested in form.

But the way how man experiences art has been reduced to 'aesthetic'; sensuous apprehension, a lived experience. Actually truth is the truth of Being, and beauty does not occur apart from this truth. This is obviously a separation from modern thinking and Kantian aesthetics.

Setting and placing an art work cannot be understood as in Modern sense of the object, but on the basis of Greek sense of 'thesis'. Setting and taking possession thought on the basis of 'thesis' means setting up in the unconcealed, bringing forth into what is present. By contrast, thesis, anti-thesis and synthesis in the dialectic of Kant and German Idealism mean a placing or putting within the sphere of subjectivity of consciousness (Krell, 1993).

This is the basis for Heideggerian building and space relationship, as it will be dealt with in detail in the following section on building and dwelling issues. But to lay the foundations, it should be cleared that, words "fix in place", "enframing" in this article, are quite different than their modern meanings. As "fixed" means outlined in the boundary (*peras* as in Greek) does not mean blocked, and preventing the 'letting happened'; letting is not passive here but with full energy, and happen is the movement that provides the clearing and concealing -their union-. When it comes to enframing (*Ge-Stell*), it should be seen as the gathering and bringing forth, into the rift (*Riss*)-design- as bounding outline (*peras*).

...being is itself brought into the rift. The rift is the drawing together, into a unity, of sketch and basic design, breach and outline...The strife that is brought into the rift and thus set back into the earth, and thus fixed in place is the figure (*Gestalt*). (Heidegger, 1993)

Here Krell, as the editor makes his contribution in a foot note about 'der Riss' (a crack, tear, laceration, cleft, or rift; but also a plan or design in drawing) which is very helpful. He explains that, Heidegger' use of a series of words -*Abriss*, *Aufriss*, *Umriss*, and especially *Grundriss*- is to suggest that the rift of world and earth releases a sketch, outline, profile, blueprint, or ground plan. (Krell, 1993)

2.2.2.2 Building, Poetically Dwelling, Thinking

Heidegger lecture “Building Dwelling Thinking” belongs to a series of lectures which reveal issues relevant to Being that he has not revealed previously. (Heidegger, 1993) Here discusses primary issues of building and dwelling by focusing on myth and poetry. Instead of art works in above section, he talks about everyday things in familiar locations, such as bridges and houses. Heidegger describes thing in this lecture as the revealing of existential fourfold, which are earth, sky, mortals and divinities, as archetypes of mythology.

With his 1951 lecture “Building, Dwelling, Thinking”, Heidegger had a strong impact on architecture. In the essay he expressed concerns with the etymological associations of the word “building”. The Old English and German word for building “*buan*”, means to dwell, to stay in a place, and it is related to the German “*ich bin*” (I am). Building, dwelling, and existing are thus related linguistic concepts. Similarly, the German word for space, “*Raum*” (related to English “room”), originally was not synonymous with the abstraction “space” (of Latin derivation) (Mallgrave, 2005) but rather meant a clearing in a forest for living or dwelling. This fact underscores the concrete relations of “belonging to” or making one’s place in the world and therefore becoming “at home”; by building our world, we at the same time construct our identities. Architecture, therefore, cannot be objectified into a set of abstract rational principles, such as utility, efficiency, economy, or functionality. It has more to do with constituting the world and giving meaning to our lives (Sıkıçakar Yücel, 2010).

In this lecture, Heidegger reintroduces the existential fourfold and thing once more in relation to building issues. He focuses on ‘the bridge’ to clarify what a ‘built thing’ is, and here explains that ‘the bridge gathers to itself in its own way earth and sky, divinities and mortals. Therefore, gathering and thing are inseparable, and talking about a ‘mere’ bridge and bridge as a ‘symbol’ are misleading and can hardly express the bridge’s thingly character. For the bridge to be its own kind of a thing and to gather the fourfold, it allows a ‘site’ for the fourfold. ‘But only something that itself a ‘locale’ can make space for a site. The locale is already there before the bridge is,...(and it can only) come into existence by virtue of the bridge’

Only that are locales in this manner allow for spaces...Raum, Rum, means a place that is freed for settlement and lodging. A space is... something that has been freed, namely, within a boundary, Greek 'peras'. A boundary... from which something begins its essential unfolding (Heidegger, 1993).

Therefore the boundary is the horizon. Like his separation of being and beings from the start he distinguishes spaces and space which can be abstracted to analytic-algebraic relations: '...spaces receive their essential being from locales not from "space".'

The critical word locale here, offers possibilities of place, through authentic involvements. That is the essence in dwelling. Man's relation to locales, and through locales to spaces, is actually inherent in dwelling. Therefore, dwelling is the actual relationship between man and space, if we think in this manner. Here, 'building dwelling thinking' are all united. Heidegger eventually matches locales and buildings saying when we think...about the relation between locale and space, but also... man and space, a light falls on the essence of the things that are locales and that we call buildings. "Buildings puts up locales that make space and a site for the fourfold". With his focus on 'techne', he tries to show how such buildings can be possible, and claims that definitely not as only in architecture, or even as techne in Greek sense, if techne is understood only 'letting-appear' in present.

To be 'capable of dwelling' is the key to be able to build. If building and thinking are not separate and if both can listen to each other they are belong to dwelling; dwelling as 'the basic character of Being'. "...Build out of dwelling...think for the sake of dwelling"...

3. ARCHITECTURE, SPACE PERCEPTION, PLACE AND LIMITS OF REPRESENTATION

This chapter aims at showing the underlying relationship between space perception and worldviews of the period when the relevant perception theory is the most popular, and questions the relationship between perceptual and representational space in architecture. That is to say; the perceptual models show difference according to the dominant worldview of the period and perception affects representation systems. Considering the worldviews of the two philosophers included in this dissertation, it is possible to say that Kantian thinking helped to encourage scientific based *schematic* perceptual models to appear, which give the importance to *vision* above all other senses. Whereas, phenomenological approach can only tolerate considerations based on *whole body's involvements* in the perception process, it also underlies linguistic problems together with the importance of *speech*.

The chapter tries to combine mainline developments from Kant to Modern Movement in the 20th century and Modernist vision of abstract art, mainly focusing on issues of *aesthetics and subjectivity*, development of *optical devices reshaping one's vision*, effects of *rational* ideas initiating from French Academy and *methodology of representing* architectural solutions. To help keeping up with the change process from Kant to Heidegger, which covers nearly three centuries, it is essential to follow up major impulses which illuminate the ties first between Kant and Modern visions of art and architecture, and then Heidegger's reaction to Modernity by offering phenomenology as the method in order to fully conceive the unity of man and world, ending the subject-object dichotomy completely. As one of the central problems in Western philosophy, subject-object dichotomy has existed over centuries, for our case of Modernity it is possible to say since Descartes, considering all over history of Western philosophy in fact, it can be traced back to Plato, therefore to very early stages of Greek philosophy.

The dualist system, which separates man and world, allows man to observe nature as a separate entity and to act upon it with his free will. Therefore the role of observation is high up, even for architects, considering issues relating to perception, understanding perception's nature, perceptual process and explaining how it works. It is essential to establish a model or system in the case of scientific based explanations, and the system is usually represented with a schema, diagram, table, etc. Therefore, system explanations for the process of perception are usually attributed with schematic representations, a schema which can display what happens in the brain during perception process. This study intends to show the connection of such efforts to Kant's schematism, therefore possible systemic defects in perception studies, which can be causing many points in perception process to be unnoticed, especially topics in architectural research, and education of architecture, etc. considering perception problems.

Phenomenology's attempt for uniting man and world, naturally would not allow for such schematic representations about what goes on in the brain, which initiates from the dichotomy explained above. Dasein represents the human being "thrown" into a world of moods and situations, always projecting itself into the future while experiencing multitude of everyday concerns, and is not only a being whose "rationality" considered as its main asset. Therefore, in phenomenological way, perception cannot be thought independent of Dasein's spatial encounters and the "care" structure as it is the unavoidable part. Instead of focusing on a separated impulse or considering perception as only a completely spontaneous activity, phenomenology attracts attention to whole body's relation with the surrounds, the role of language and speech in perception process.

Following this summary it should be clear enough that, only after stating the problem and its background in history; it will be possible to go into more detailed explanation to deploy relations with existing research and contemporary problems in architectural discourse. Therefore, the structure in the third chapter of this dissertation is based on reflecting two issues in two main sections: first one, explaining the step stones of the period between Kant to the 20th century phenomenological reactions to emphasize that Kant is an important name behind Modernity and Modernist visions of abstract art. The other main issue in this chapter is to describe conflicting perception systems in relation to these attitudes, and to show that perception studies in architecture have

not actually been totally separate from Modernist paradoxes (Sıkıçakar Yücel, 2010). If it is proved that architecture's perception problem is still valid, then what contemporary arguments rely on to cover this gap, this is the final part's focus in this/ the present chapter, and the reason of course the following chapter's existence, since many questions are left uncovered in mostly popular and shallow approaches in contemporary literature. It is possible to question success level in many joyful examples since Christian Norberg-Schulz inclining to interpret architecture in phenomenological manner, as well as perception systems disregarding body as a whole but emphasizing only one single sense. For many attempts, the questions are left open to judge the success level achieved.

3.1 Ideas of form and space after Kant, towards modern vision of *abstract*

Starting from Kant it is possible to trace several different movements some directly some indirectly relevant to architecture, but eventually leading to the conception of abstract art and Modernist abstractions of early 20th century architectural movements that created the main steps towards the final break from antiquity's classical approaches to individual marks of pioneers of early 20th century architecture. The main lines of changes, in what considers the interest to this study, can usually be grouped under such issues relevant to aesthetics, subjectivity, perception, architectural representation, technology of optical devices (which affect the possibilities of seeing/image recording) and logic in general. Even though the last one seems the furthest away from our area of concern, the results it has created eventually drew the path to reach computer programs and therefore re-approaching architecture through this media.

We must mention names who carried Kantian tradition to 20th century; Neo-Kantians such as Ernest Cassirer who provided symbolic approach to philosophy of perception and Erwin Panofsky to history of art. Even seeing these two names only, makes us reexamine Kantian philosophical system, as we must rethink of Kantian impacts in architectural history reaching to 20th century as the underlying ideas of the names as such.

The issues of aesthetics and subjectivity considering philosophical scope, seem to be more closely related with the task here, which is to follow the issues relevant to the 20th century vision of abstractions in art and architecture, and which also is to reflect

upon issues of perception and representation. Two main sources of reference related to these areas has been Andrew Bowie's (2003) accounts on aesthetics and subjectivity and Ikonou and Mallgrave's (1994) approach to German Aesthetics and Empathy, the latter was an analysis mainly from the side of architecture though connecting it with other relevant areas some of which were newly emerging in the 19th century, including psychology and perception. Besides Andrew Bowie's attempt on aesthetics, Andrew Benjamin has also shown the relationship of Kant to architectural issues at a later period.

For the steps following Kantian subjectivity, Bowie suggest to look through German Idealism and the names such as Fichte, Schelling, Hegel, Schleiermacher and Nietzsche in order to better judge the more recent criticisms coming from names like Adorno and Derrida, which is advisable for researchers who want to continue exploring further on the ideas initiated in this dissertation, and to go deeper into German Idealism which starts after Kant. As suggested by Bowie, German philosophy is a vital resource for trying to come to terms with modernity.

For the steps in the direction of mathematics, one could look at names such as Frege (not only his contributions to logic, but also his theory of "sense and referent" has been very important making him a special example of mathematician-philosophers), Hilbert (unification of plane geometry and solid geometry can be mentioned here together with many other achievements in mathematics), Gödel (founder of programming),...etc. and the invention of non-Euclidean geometries.

3.1.1 Non-Euclidean Findings of Space

This section is definitely not a detailed account of mathematics of Non-Euclidean Geometries but a very brief introduction to raise awareness on the issue. And simply to relate it with the overall change in scientific theory since Kant, or actually 17th century, which did not happen out of blue but following the foot steps of previous engagements.

A.C. Crombie (1970) claimed that it is possible to trace in the thirteenth and fourteenth centuries the development of a conception of natural science similar in several fundamental respects to that found in the seventeenth century. Following the recovery of the "Euclidean" form of science, the medieval theory of science embraced three broad aspects. First, there was the analysis of logical relationships

between theories and the data explained and of the criteria and methods for testing and accepting a theory. These included the empirical principle of verification and falsification or exclusion and the rational or conventional principle of economy.

Secondly, there was the conception, neo-platonic in inspiration that nature was ultimately mathematical and could be explained only by mathematical laws. This introduced, in place of the Aristotelian “form” with its irreducible qualitative differences between different substances and their movements and behavior, a new concept of universal “laws of nature” as the proper object of scientific inquiry. And third, there were the techniques, especially mathematical techniques, introduced in exploiting this program and ultimately transforming it.

A major change between the fourteenth and seventeenth century was based on the immensely superior technical equipments resulting in efficiency of seventeenth century science. The restoration of full contact between science and scientific methodology was one of the profoundly influential events.

The forms and methods of modern science are the product of a long and complicated intellectual struggle but as in so many aspects of the Scientific Revolution the final stages, so long prepared, were taken rapidly by men of genius in the seventeenth century. But to become a good judge of science was something required resolution and sophistication even after the main way was clear. Francis Bacon, heir in a sense to the empirical tradition of Greek medicine and Aristotle, and Descartes, heir in a sense to Euclid and Plato, both proposed versions of a second great model of scientific thought that was to replace the first great model, that of Greek geometry, or as Bacon mistakenly thought, of Aristotle’s *Organon*. Galileo’s version is nearer the mark in physics. ..The continuation of the debate down to the present moment, and the transformation of the seventeenth-century model itself as a more recent developments in physics, in non-Euclidean geometries, in the mathematical theory of probability, and in logical analysis, show with the most unequivocal directness that thought about the forms and methods of science is an inseparable part of the progress of scientific thought itself.

Euclidean geometry was regarded as a perfect guide for over 2000 years. It was the excellence model for mathematics and science. Euclid’s book was used in the 19th century with little modification and today it is still in use, considering architectural representation it is still widely used in schools of architecture and any regulations

about the submission of an architect's design, definitely the case for application projects, is asked to represent a system based on Euclidean understanding.

The five postulates of Euclid are usually the base to start explaining how basically non-Euclidean differs from Euclidean system. The first four of these are still valid but the fifth one can also be proved otherwise. The postulates can be shortly explained as below:

- 1- A straight line segment can be drawn joining any two points.
- 2- Any straight line segment can be extended indefinitely in a straight line.
- 3- Given any straight line segment, a circle can be drawn having the segment as radius and one end point as center.
- 4- All right angles are congruent.
- 5- If two lines are drawn which intersect a third in such a way that the sum of the inner angles on one side is less than two right angles, then two lines must inevitably intersect each other on that side if extended far enough.

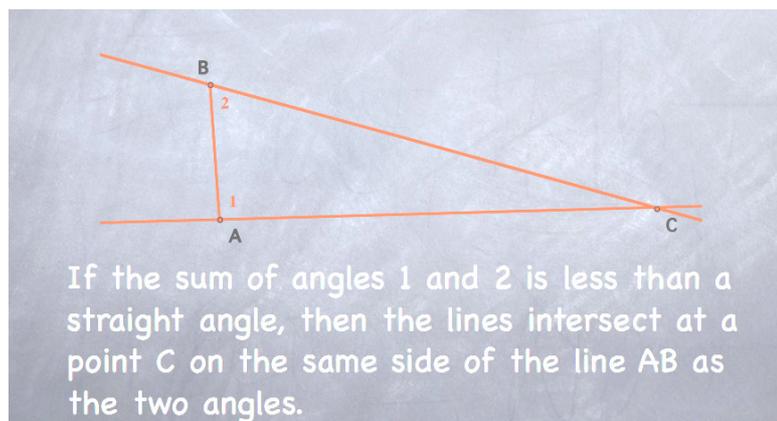


Figure 3.1: A Picture of the postulate 5, adapted from Url-1.

In the 1800 some scientists assuming that the postulate 5 is false, then concluded that the resulting theorems were about a new, non Euclidean, geometry. Gauss, Bolyai and Lobachevsky made this decisive step independently but about the same time. The aim then became to make models of non-Euclidean geometry relying on Euclidean system, for Beltrami and Klein, as well as Poincaré. Thus by working with disks and arches it was proved that:

- Some parallel line pairs have just one common perpendicular and grow far apart. Other parallels get close together in one direction.

- Angle sum of triangles are less than 180 degrees and there are no rectangles at all.

Reimann was the one who first made a study of curvatures in all dimensions. In three dimensions, there are three classes of constant curvature geometries. All are based on the first four of Euclid's postulates, but each uses its own version of the parallel postulate. The "flat" geometry of everyday intuition is called Euclidean geometry (or parabolic geometry), and the non-Euclidean geometries are called hyperbolic geometry (or Lobachevsky-Bolyai-Gauss geometry) and elliptic geometry (or Riemannian geometry). Spherical geometry is a non-Euclidean two-dimensional geometry. It was not until 1868 that Beltrami proved that non-Euclidean geometries were as logically consistent as Euclidean geometry.

The discovery of non-Euclidean geometries opened up geometry, and became the basis for such concepts as relativity a century ago and string theory today. The idea of curvature is a key mathematical idea, and caused a substantial difference in how the space is treated in architecture. Even though the plane hyperbolic geometry is a simple example of a negatively curved space the results became widely visible in architecture at later periods when the shapes became possible to be constructed. But without the conception and representation of such shapes the construction of hyperbolic-parabolic forms would become impossible.

Therefore non-Euclidean geometry has affected architectural representation as it is better described in computer based modeling. The shift in the active role of geometry is found both in the appropriation of geometry as idea and its engagement as problem solver for design. (Burry, 2010)

However some forms have achieved as covering spans especially in 1950ies and 1960ies considering roof tops of sport halls as well as concert and congress halls etc, which also constituted the important landmarks of towns where they were constructed. Bertrand Russel's comments on Non-Euclidean geometries and the separation therefore caused by being *habitable* (Euclidean space) and being *inhabitable* (non-Euclidean spaces) is really notable (Russel, 1996). It has been widely considered that our perceptual abilities are based on a 3-D Euclidean model. Therefore, it has been a challenge how an n-dimensional system is possible to conceive and to be designed. To create spatial experiences based on non-Euclidean spatial systems is after all a high topic for many architects today, remembering blobs

of Greg Lynn and his successors, taking experiences to a phenomenal level with trials about audible spaces, names like Marcos Novac being amongst the leader, there are various groups/individuals working with such geometric developments. Some being visible, some being audible there have been trials to create different spatial experiences making everyone reconsider production and nature of architecture in relation to perception and representation of architectural space.

3.1.2 Devices and technologies of vision

Each direction has made their really valuable contribution to this issue undoubtedly, nevertheless it would be spacy to include all names under this title, and the main intention is to summarize how the approaches towards space and perception started changing and abstract notions of art could be reached, and this has happened not coincidentally with the contribution of such thinkers claimed to be more scientific to their predecessors most of the time and some technological changes e.g. discovery of visual devices helping to give different opportunities in seeing and experiencing the world visually. Therefore, at the beginning, early in the nineteenth century, a new set of relations between the body on one hand and forms of institutional and discursive power on the other redefined the status of an observing subject.

The philosophical, scientific, and aesthetic discourses overlap with mechanical techniques, institutional requirements, and socioeconomic forces. Developments in the technological system of visualizing through new optical devices are among the dominant factors preparing the changes related to visual perception and the position of the observer within world and the set of relations he/she establishes to interact with the environment. The isolation of eye, changing tactile relations with the world are among the issues helping us to understand the general situation of a subject.

Any optical device relating to formation of what is seen and how it is recorded and then represented for others to observe the existing entity, places itself within the scope of discussions about “representation” and its historical journey. There will be a section particular to architectural representation in following parts of this study.

The changes towards 19th and 20th century proved the end of perspectival space, of mimetic codes, concerning the invention and dissemination of photography and other related forms of “realism” in the nineteenth century. For some, these optical developments are part of a continuous unfolding of a Renaissance-based mode of

vision in which photography, and eventually cinema, are simply ongoing developments of perspectival space and perception, but actually the notion of modernist visual revolution depends on the presence of a subject with a detached view point. Therefore the subject's historical position needs to be interrogated and the abstraction process involved needs to be clarified.

For nearly two hundred years, starting from the late 1500s, the status and possibilities of an observer was described by camera obscura. Remembering the disembodiment of the body from real world, to describe the high point of his rational approach, for Descartes the images observed within the camera obscura are formed by means of a disembodied cyclopean eye, detached from the observer, possibly not even a human eye.

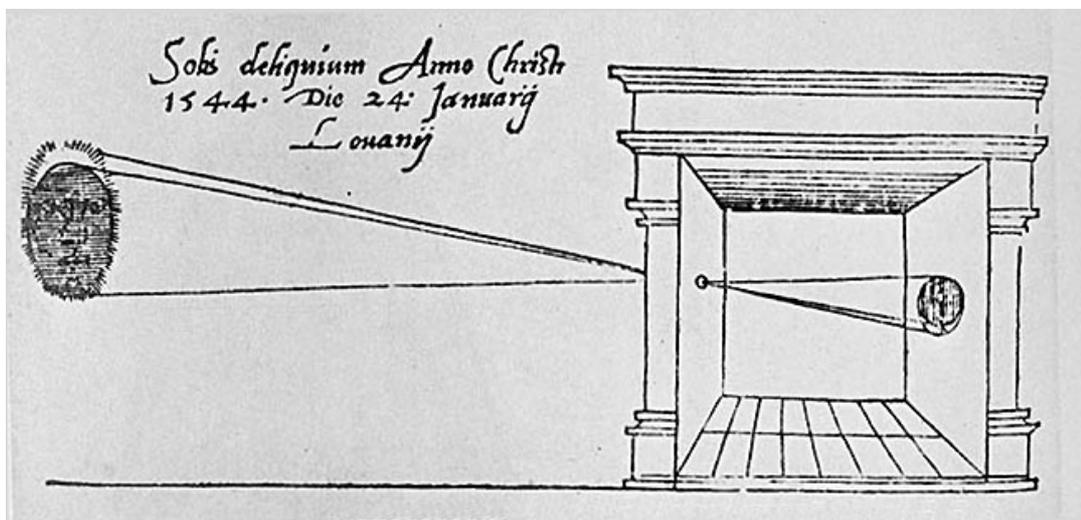


Figure 3.2: Camera Obscura Box¹, adapted from Url-2.

After the collapse of the articulation of camera obscura model of vision, in the 1820s and 1830s, the scope was displaced by radically different notions of what an observer was, and of what constituted vision. If, later in the nineteenth century, cinema or photography seem to invite formal comparisons with the camera obscura, it is within a social, cultural, and scientific milieu where there had already been a profound break with the conditions of vision presupposed by this device. Only from there on, between 1819 to 1844, a period in Europe, when the idea of both the optical apparatus and the human body underwent profound transformation. (Crary, 1992)

¹ Light from an external scene passes through the hole and strikes a surface inside where it is reproduced, upside-down, but with color and perspective preserved. The image can be projected onto paper, and can then be traced to produce a highly accurate representation.

Some optical devices took their part in the mass visual culture of the nineteenth century. The phenakistiscope (Figure 3.3) and the stereoscope (Figure 3.4), were first developed to quantify and formalize the operation of binocular vision. These were components of nineteenth-century "realism," and mass visual culture. For Crary (1992), what was important that, these devices *preceded* the invention of photography and *in no way required* photographic procedures or even the development of mass production techniques. They show that the individual is the observer of something calculable and regularizable and thus human vision is measurable and alterable. Therefore, they are strongly related to new arrangement of knowledge about the body and the constitutive relation of that knowledge to social power.



Figure 3.3: Phenakistiscope¹, adapted from Url-3.

The notion of vision as touch is adequate if a field of knowledge and its contents are organized as stable positions within an extensive terrain. In the nineteenth century, such a notion became incompatible with a field organized around exchange and flux; that is, the knowledge is largely optical considering mobile signs and commodities, and the stereoscope (Figure 3.4) became a crucial indication of the remapping and subsumption of the tactile within the optical.

The body that had been a neutral or invisible term in vision was now what they obtained the knowledge of the observer. That means the vision was relying on the subjectivity of the observer; causing two intertwined paths to open up. First one was related to the *subjectivity* in Modernity and autonomy of vision, derived from the body. The second line was of the *standardization* and *regulation* toward forms of

¹ The disc was spun in front of a mirror, a person looking through the slits from the back of the disc would see a moving image reflected in the mirror.

power that depended on the *abstraction* and *formalization* of vision. These paths usually overlap in social scene where the diversity of concrete acts of vision occur.



Figure 3.4: Stereoscope¹, adapted from Url-4.

To summarize, beginning early in the nineteenth century, a new set of relations between the body on one hand and forms of institutional and discursive power on the other redefined the status of an observing subject, based on wide range of social practices and domains of knowledge. These are among the reasons why the camera obscura lost its place, while in particular the stereoscope, as a means of detailing the observer's transformed status gained its role in the nineteenth century.

3.1.3 Rationalism, Architecture and Early Moderns

Few concepts more intrigued artistic imagination in the twentieth century than the notions of form and space. Yet the preoccupation with these phenomena did not occur suddenly, for architects, artists, historians, and philosophers had increasingly concerned themselves with their consideration during the last half of the nineteenth century and had produced an impressive body of literature devoted to these speculations.

¹ A stereoscope is composed of two pictures mounted next to each other, and a set of lenses to view the pictures through. Each picture is taken from a slightly different viewpoint that corresponds closely to the spacing of the eyes. The left picture represents what the left eye would see, and likewise for the right picture. When observing the pictures through a special viewer, the pair of two-dimensional pictures merge together into a single three-dimensional photograph.

Nevertheless it should be made clear that marginalization process of place as a significant concept took place with a lengthy preoccupation with space, regarded as absolute and more particularly as finite (frequently both together) (Casey, 1997)

This preoccupation shows itself in late Hellenism and Neoplatonism, in Medieval thought of 13th and 14th centuries, and in Renaissance thought. Burgin (1987) summarizing space history explains that in the cosmology of classical Greece, ‘the universe of being was finite and spherical, with no endless stretch of emptiness beyond. Space had the form of “. . . a sphere with centre and circumference” as F. M. Cornford (1937) writes. To re-emerge in the late Middle Ages, this classical-space essentially survived the biblically derived ‘flat earth’ of early Christian doctrine. In medieval cosmology, supercelestial and celestial spheres encompassed, but did not touch, a terrestrial sphere - the space of human action - in which every being, and each thing, had a place preordained by God and was subject to His omnivoyant gaze (Burgin, 1987). Foucault (1986) has termed this medieval space the ‘space of emplacement’; this space, he observes, was effectively destroyed by Galileo: not that the earth revolved around the sun, but in his constitution of an infinite, and infinitely open space. In such a space the place of the Middle Ages turned out to be dissolved, starting with Galileo and the seventeenth century, extension was substituted for localisation.

The vehicle of this changed cosmology was Euclidean geometry. Euclid wrote the *Elements of Geometry* around 300 BC. Husserl, in *The Origin of Geometry*, supposes that this system arose out of practical activities, such as building. In the West, the primacy of geometry over perception was stressed by St Augustine (1976), who wrote: “reason advanced to the province of the eyes ... It found ... that nothing which the eyes beheld, could in any way be compared with what the mind discerned. These distinct and separate realities it also reduced to a branch of learning, and called it geometry.” (Burgin, 1987)

In the process of establishing modern notions of space and form, in parallel to the theoretical efforts, members of French Academy, around 17-18th century, clearly stating that the main issue in architecture should be ‘reasonability’ and ‘necessity’. Outside of French Academy, contributions from the German speaking countries involving approaches in aesthetics, which was a new discipline in philosophy then, seem important.

French Academy followed Descartes on the ground of reasonability, but there were other and earlier efforts stating ‘reason’ first. The task of academy consisted in the passing of resolutions which were eventually to be incorporated into a normative architectural aesthetic, perhaps even result in the establishment of of a national French order (Kruft, 1994). The principles on which academy’s discussions were based derived from not only architecture but philosophy and the natural sciences, as well: in the spirit of Descartes’ rational philosophy, the basic principle of all discussion is *reason*. As it is seen in Abraham Bosse’s frontispiece for *Traité des Manners de Dessiner les Ordres de L’Architecture Antique en Toutes Leur Parties* (1688) it was clearly stated that “La raison sur tout” (Reason above everything) was the motto of the time (See Figure 3.5).

In 1673, a new French translation of Vitruvius’s *De Architectura* was published, the author was Claude Perrault (1613-88), and this version of Vitruvius’ work which made him speak French was found very influentive and took its place in the Academie Royal D’Architecture’s sessions in a short period of time replacing the previous translation by Jean Martin.

For Perrault, all architecture is founded on two principles: “One of them is positive, the other arbitrary. The positive foundation is usage and the useful and necessary purpose for which a building is intended, such as solidity, salubrity and commodity. The foundation I call arbitrary is the beauty which depends on authority and custom” (Perrault 1673, 1684). Perrault argues in another note, is an arbitrary beauty, and not as most architects believe, something found in nature like the relative sizes of the stars or of the parts of the human body .

Following his Vitruvius translation, Perrault published *Ordonnance for the Five Kinds of Columns After the Method of the Ancients* in 1683, wanting to establish the role of architectural theory, his aim was to establish methodical foundations for architectural practice as certain and invariable as those developed for science by René Descartes in his *Discourse on Method* of 1637.

As explained by McEwen (1994), although Vitruvius used many Greek words, the word *theoria* is not one of them. In the opening lines of *De Architectura*, he writes that an architect’s knowledge arises from *fabrica* and *ratiocinato* (Vitr.I.i.I). In the translation that the Académie Royal d’Architecture considered too obscure, Jean

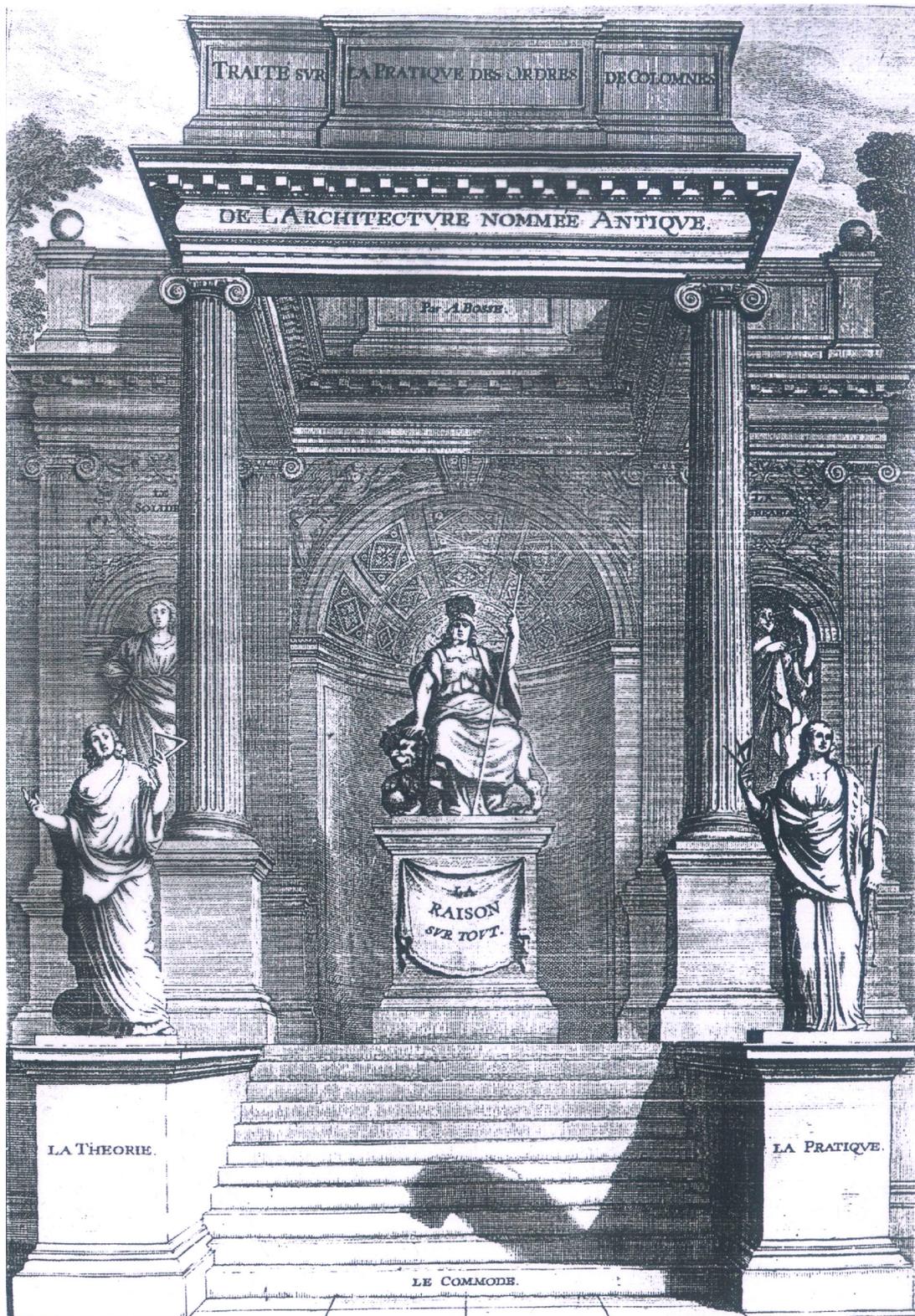


Figure 3.5: Abraham Bosse, *Traité des manières de dessiner les ordres de l'architecture*, 1664, frontispiece, adapted from Krufft (1994).

Martin rendered this as a *fabrique et discourse* (1547, fol. IV), loosely ‘fabrication and discussion’. Perrault, however, translates *fabrica et ratiocinatio* as *pratique et théorie*, (1673 and 1684). His using *théorie* reveals about Perrault’s position at the crossroads between the Renaissance and Modernity. According to Jean Martin’s interpretation, what an architect knew (his *scientia*), grew out of his first-hand knowledge of the craft of building (*fabrica*) and the *ratiocination* or ‘discussion’ that reflected on it to give it meaning in a world order where all branches of learning were linked by a common *logos* or *ratio* (Vitr.I.i.12). For Perrault, over a century later, *theory* was to direct *practice* by supplying architects with methods and any ‘discussion’ not related to that end was superfluous.

In Renaissance theory, men were part of the natural, cosmic order, and to build was to praise the Creator by imitating the proportions of that order. (McEwen, 1994) Renaissance men understood themselves as belonging to this order through the mediation of their microcosmic bodies (Vitr. III.i). Hands and upright posture gave people their human specificity within the natural order (Vitr. II.i.2)

After Descartes, man’s defining essence became that of a freely rational *thinking thing*. According to the taxonomy developed by Perrault and the Académie des Sciences, speech replaced hands as the organ of intelligence, and speech, not hands, was what made humans human (Picon, 1988). As a *thinking thing* that uses language –which is without natural foundation, as Perrault claims, and, like proportion, shaped by arbitrary rules – man no longer shared in any cosmic identity. Uniquely equipped with reason, he stood above and apart from a nature made up of inert *extended things* that, unlike him, were mechanically bound by causal laws (Toulmin, 1990). These laws, once understood, could be manipulated to his own ends so that, Descartes asserted near the end of the Discourse on Method, “we might become as masters and possessors of nature” (Descartes, 2003). A Renaissance man who was *part* of a cosmic whole could not have aspired to becoming its *master* or *possessor*.

When Perrault maintains that proportions have no natural foundation his reference is to this reified Cartesian nature, not to the one in which the *discourse* of humanists was grounded. In late seventeenth-century France, not everyone embraced the new Cartesian understanding of nature. Among architects most, as yet, did not and this is what made Perrault’s position so revolutionary. François Blondel, director of the Académie Royal d’Architecture, and professor of the course given there, was among

those who adhered firmly to the traditional view (Blondel 1675-83). No wonder why Perrault and Blondel could not agree about natural foundations of architectural beauty; they were not talking about the same nature.

After his Vitruvius translation, Perrault wrote his *Ordonnance for the Five Kinds of Columns After the Method of the Ancients* (Paris, 1683), describing his aim as the establishment of fixed rules for the “proportions of those elements on whose beauty the ornament and majesty of great buildings entirely depend”.

After a perfunctory allusion to the human body as the source of the proportions that “give buildings their beauty” (Perrault, 1993), Perrault begins with an assessment of the confusion concerning those proportions, for proportions are completely inconsistent both among the built works of antiquity and as recommended in the treatises of modern authors such as Alberti and Philibert De l’Orme. Architectural proportions vary greatly, and yet the works where these variations are visible meet with uniform general approval. As McEwen suggests, musical harmonies are positive not so much because they are ‘established by nature’, but because they are invariable. Positive beauties do exist in architecture, but proportions being variable, are not among them:

“two kinds of beauty in architecture... beauties based on convincing reasons and (those) which depend only on prejudice. I call beauties based on convincing reasons those whose presence in works is bound to please everyone. They include the richness of the materials, the size and magnificence of the building, the precision and cleanliness of execution, and (bilateral) symmetry...” (Perrault, 1993)

Positive beauties are easily understood by everyone. Knowledge of arbitrary beauties, however, is the specific domain of the architect. Like a lawyer who must know the articles of civil codes, an architect’s task is, essentially, to know the rules and how to apply them, and not to bother about why. So that some regulations and some rules for everyone to apply in order to achieve better architecture for France could be the way for successful buildings; a Royalty architecture perhaps. (McEwen, 1994)

If one understands proportion the way Vitruvius and his Renaissance interpreters did, which is to say as the *analogia*, or binding force that guaranteed the coherence of the universal harmony in which François Blondel continued to profess such unshakable faith, it is no wonder that Perrault was determined to demystify it. Application of the

scientific method depends for its success on the isolation of the phenomenon under study. Galileo's study of motion, for example, depended on the postulation of a perfect vacuum. To conduct 'controlled' experiments under laboratory conditions means cutting through the web of analogies which constitute the very fabric of universal harmony. Allow the 'mystery' of proportion, and you disallow modern science.

Since Vitruvius, optics served as the virtually sacrosanct justification invoked for adjustments made at the decisive point where ideal proportions (the *neutral* ones that bound architecture to the cosmic order) encountered real, complex and infinitely variable circumstances of a specific building project and where, as Blondel (1675-83) taught in his course, the judgement of the architect met its ultimate challenge.

"Once ...proportions have been established", Perrault asserts, "they should no longer be changed or made different in different buildings for optical reason or because of the different aspects they may have" (1683, 1993). Alternating proportions for reasons *aspect* is not only useless, it is positively vicious (1683, 1993). Why? Perrault says that the eye, being equipped with unerring judgement, is never really deceived, no matter what the *aspect*. Therefore, since vision is rational and flawless, (Cartesian and disembodied: see Judovitz 1993, Pérez-Gomez, 1992) no adjustments need to be made to compensate for its non-existing shortcomings.

The key to Perrault's hostility to optical adjustments lies in the word *aspect*. The *aspect* of a building is at once its appearance and the angle or point of view from which it is perceived. *Aspect* covers a whole matrix of relationships: between the human subject and the built work; between the work and its specific situation. To admit that *aspect* plays a role in the architectural process would overturn the entire systematic agenda of the *Ordonnance* by admitting that unpredictable or unregulatable circumstances, and not rules, are what finally determine what gets built. (McEwen, 1994) To admit *aspect* would mean to allow that an architect, through independent judgement, plays a role beyond that of a technician who places his expert knowledge of arbitrary beauties at the service of an authority which, thus compromised, would no longer be able to stand as the guarantor of rapid and efficient production.

3.1.4 German Philosophy, Aesthetics and “Subjectivity”

If we trace the ideas of form and space back through their philosophical development we find that issues of form and space can just as well be viewed preeminently as nineteenth century aesthetic problems, and the decade of the 1880s can be viewed as the vibrant crossover point between 19th aesthetic tendencies and 20th century visions of abstract art and architecture. Through this journey, if we look at German Aesthetics, we come across the names of Vischer with his special emphasis on “empathy”, Fiedler seeing architecture as a “spatial art” and focusing on issues related to “visibility”, Göller interested in “origin of style”, Wölflin dealing with “psychology of form” and Schmarsow pronouncing “phenomenology” at a very early period.

It was Immanuel Kant who provided the paradigm for German philosophical treatment of form and space in the 19th century. It is observed that he caused a split within 19th century aesthetics: the ideal element he called “symbol of morality”, gave support to the idealist schemes of Schelling, Fichte and Hegel. Kant’s initial concern with form prompted a second line of aesthetic development: one concerned, first, with the subjective aspects of aesthetic contemplation and, second, with the attributes of pure form without content (Mallgrave and Ikonomou, 1994).

The subjective side of the aesthetic act was advanced by Arthur Schopenhauer (1788-1860). Especially his book *The World as Will and Representation* shaped 19th century aesthetics in two ways: first, with its approach to mental animation which can realise the aesthetic act of viewing, and, second, with the emphasis it placed on the physiological nature of perception. For him, the creation of an idea or image was solely a neurological process: “What is imagination? A very complicated psychological occurrence in an animal’s brain, whose result is the consciousness of a picture or image at the very spot” (Schopenhauer, 2010). For Schopenhauer, everyone was not able to formulate this image with equal clarity; but only artists, who have “an abnormal excess of intellect” by which the brain is able to produce sharper, more refined images, could then reach a state of pure objectivity.

A similar emphasis on the perceptual act is found in the psychological theories of Johan Friedrich Herbart (1776-1841) but with a total exclusion of intellectual and

emotional content. Herbart claimed to improve Kant's approach; he eliminated Kantian faculties and forms of intuition, he tried to simplify the theory of form and he defined aesthetics essentially as the science of elementary relations of lines, tones, planes, colors, ideas, and so on. Similar to Bauhaus and Moholy-Nagy (see Figure 3.5), Mondrian, Kandinsky, etc. the problem of form now becomes the delineation of relations of forms, separating them from the host of secondary or extraformal ideas that accompany the aesthetic act, which are comprised of ethical, emotional, intellectual, and sentimental *intrusions* into the act of aesthetic perception, including the specter of *content*, which Herbart regarded as altogether extraneous to aesthetic viewing.

Besides his role in philosophy he was a pioneer in the area of psychology and pedagogy. Herbart also affected many names and their works, like Adolf Zeising's works on golden section, Eduard Hamlick's musical criticism and Herman Helmholtz' approach to musical aesthetics, as well as Gustav Fechner with his motto "aesthetics from below", and Herman Lotze interested in human psychological condition. All this effort led to the experimental approach of Wilhelm Wundt (1832-1920), whose laboratory was the first for modern psychological investigation. His terminology –for example, his distinction between sensation, feeling and emotion– established the conceptual framework for much of the discussion of the last decades of the century.

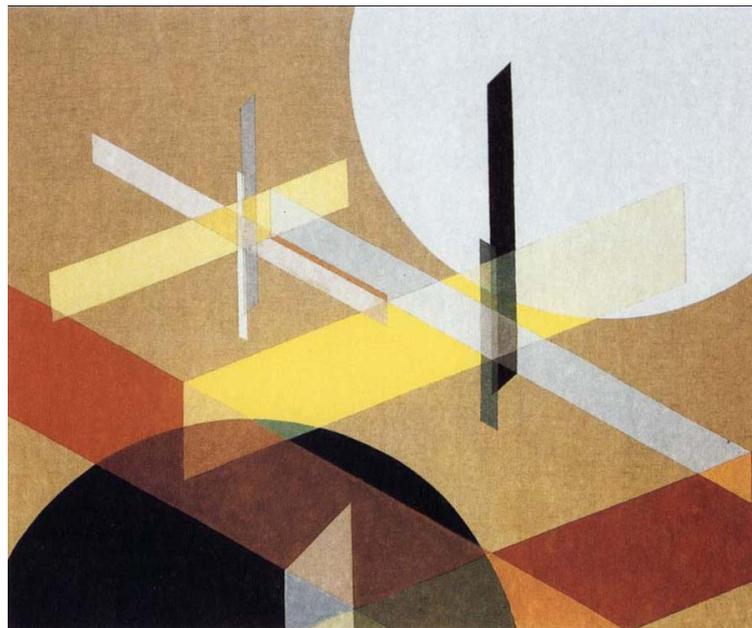


Figure 3.6: Composition Z VIII, Lazlo Moholy Nagy, 1924, adapted from Url-5.

With Robert Zimmerman (1824-1898) and his advancing Herbartian aesthetics into a rigorous and comprehensive “science”, a system was constructed entirely around the problem of form. His main rival was Friedrich Theodor Vischer. Vischer’s ethical coloring and preference for a work’s “content”, effectively reduced the role of the artist to that of a Bürger, or “good citizen”.

Zimmerman opposed restricting aesthetics to a single ideal beauty. The failure of idealism was its one sidedness, that is to say, the way in which “it extolled the infinity of the Idea in order to conceal the poverty of the appearance”.

Vischer’s main emphasis was on *empathy*. The progression in Vischer’s psychology is from sensation (immediate, responsive) to feeling (immediate and responsive but still external). Then depending on an empathetic feeling, the situation deepens and one’s ego actually penetrates the phenomenal object. The word empathy for Vischer denotes a radical and throughout transference of our personal ego in which our whole personality (consciously or unconsciously) merges with the object, but we retain our identities. That means, although the object materially remains separate and distinct, its mental representation and mine become one...Therefore, in pondering an object artistically, our feeling expands into an emotion that fills out the object; at the same time we impose a universal, rational norm onto the object. Through our pantheistic instinct, we overcome all imperfections of human frailties in our artistic activity, and depict the perfect human being. In this way, subjectivity is overcome and art becomes stylized or intensified but this happens individually.

Among the critics of 19th century who are concerned in wisdom Conrad Fiedler was probably the most influential. He was mainly concerned with the origin of artistic activity following Kantian line in his critics.

In his essay on "Style Change in Architecture," (1887) Adolf Göller described an inherent dynamic of change, based on the psychological "jading" or fatigue (Ermüdung) that occurs in our delight with pure form. The pleasure we take in pure form, that is form which is independent of conceptual or symbolic content, is directly tied to the work of forming "memory images." In the case of buildings, which cannot be experienced all at once, these memory images gradually become clearer through repeated viewing. These experiences are pleasurable because they are an educational process, developing our sense of beauty. In Göller's account, we tire of

forms that have become too easy to remember (which does little to explain architecture's persistent reliance on simple geometry).

Wölfflin was very interested in psychology of forms; he also claimed at an early stage that vision itself has its history, and the revelation of these visual strata must be regarded as the primary task of art history." Wölfflin combined the "emphatic" notions of von Hildebrande with his search for the "basic principles" (Grundbegriffe) underlying the creation and appreciation of art.

Schmarsow, focused on defining architecture exclusively as the spatial art, in contrast to Wölfflin 's formalism (Mallgrave and Ikonomou, 1994). He was the first to consider the *spaces* in buildings as architectural elements. His description of buildings uses biological metaphors, making them appear as if they had psychological intent. For him, the three principles of human organization were *symmetry*, *proportionality*, and *rhythm*. Their formulation revealed his premises, which embraced the role of the *psyche* and accepted the attributes of the body in our perception of space. Therefore, he was coming close to the understanding of phenomenology of architecture, at an early period. That encounter entailed an awareness of us, as beings that inhabited space and of our existence within the cosmos. As the creation of architecture unfolded, we reminded ourselves to focus on its essential aspect--the creation of space which affirmed our humanity.

3.2 Space Perception

After seeing the main changes of the situation of the subject since Kant and Modernist view in general, from this point on it seems possible to go through issues of perception of architectural space which was directed by schematic description of Kant, but bodily involvements as being the main issue for a phenomenological point of view needed to be included in the scope of discussions as the counteracting position for the theories of perception.

3.2.1 Theories of Perception

A short journey through main theories of perception in psychology usually proves the need for schematic understanding of the mental processes by this discipline and therefore a basic inclination towards Kantian systematic approach.

The word "perception" comes from the Latin words *perceptio*, *percipio*, and means "receiving, collecting, action of taking possession, apprehension with the mind or senses." In philosophy, psychology, and cognitive science, perception is the process of attaining awareness or understanding of sensory information.

There could be several ways of classification of approaches regarding perception. From the point of view of psychology, there usually exist two main lines of understanding from the start. When psychology began exploring perception, cognitive development, and learning, it took the longstanding philosophical controversy between empiricism and rationalism. Therefore, the empirical view in psychology dominates, for example, B.F. Skinner's 'behaviorist' theories and a little less domineeringly the 'transactionalist' theory of Ames, and the 'organisational' or 'organismic' position in psychology promotes a rationalist notion based on innate psychological processes that provides base of perception and cognition. The latter is basic to Gestalt psychology and its successors, for example, Piaget's 'structuralist-developmental' approach.

Perception, (a bit similar with Kantian intuition), is that process by which a mental image, or percept, of an object or phenomenon is acquired. This is a process of segregation and unification by which environmental stimuli are organized into specific forms. Cognition like what Kant calls understanding of an object or any form, on the other hand, is how the percept acquires value – that is, place and function in the individual's universe of knowledge. This is the process, by which the percept becomes a meaningful image, and so it necessarily involves recognition, memory and thought. In short, cognition is conceptualization.

From the empiricist point of view reflected in psychology, i.e. for behaviorists like Skinner, the mind is a *tabula rasa*: what is structured through learning, and resulting memory, and perception is not a self-contained psychological process, but rather a form of human 'behavior'. Therefore, what we see depends on what we know; the one we 'choose' is only the one we are able to 'recognize'. For the transactionalists like Ames, perception must be a selective process, a 'purposive action' upon which assumptions about the perceived object are built. Perception is, thus considered, a 'creative' act, that environmental stimuli do not contain information. Hence, sensory images need to be 'processed' to yield knowledge. The overemphasis on the role of memory seems the main problem with empiricists, and the separation of sense organs

from the brain, as claimed that the sense organs deliver data while brain analyzes it into percepts. Therefore, sensation is regarded as 'lower' and perception is a 'higher process'. Helmholtz, Wunt and Titchener are counted among the advocates of empiricism.

However, organizational theories regard perception as governed by fundamental biological processes that are initiated by relations contained in the stimulus pattern itself. Thus perception requires for Gibson, a sentient organism with certain perceptual abilities, but also an environment with certain perceivable characteristics, and perception is seen as a mode of interaction between the organism and the environment, a mode which cannot be described by neither physiological principles nor the composition of the stimulus pattern alone. Central points of organizational theories were acclaimed by Köhler, Koffka and Wertheimer who are the founders of Gestalt psychology, according to which, the character of the perceptual field is primarily macroscopic, that is, topological and nodological; percepts possess a whole character which transcends the character of their parts.

Seeing the approach by Ralf Weber (Weber, 1995) it is not so difficult to claim that tendencies to describe mental process are very keen on using schematic process description a bit similar to stages and schematic implications of Kant's systematic approach, and they aim at establishing universals in relation to perception of form. In order to achieve this, all meaning is needed to be stripped off any form, so that its perception can be the same for all subjects regardless of their memories obtained through experience about any particular form. Weber, as being a domineering name referred by many architects working on issues on perception, summarizes his arguments on perception and cognition in three points:

- By adopting the organizational position, it is justifiable to make a distinction between presentational and extramorphic properties. Presentational properties result from processes of perceptual organization, which are functionally independent from processes of cognitive organization, by which properties are associated with the object.
- Perception can be considered a process autonomous from the application of concepts acquired by previous experiences. It must occur

prior to –and indeed it must be a prerequisite for- the formation of operative knowledge. Hence, the internalization of form cannot be constrained by meanings associated with the percept through the application of acquired concepts. Accordingly, perceptual properties are universal.

- Because presentational properties must be internalized to allow cognitive representation of an object, all judgements about perceivable things must be partly be constrained by properties of form –so as their representation according this system-. In other words, all impromptu judgements about objects must contain embedded aesthetic judgements.

From the point of philosophy though, classifications are almost similar to psychology's but with a difference.Current philosophies of perception fall roughly into three categories: 1) empiricist/analytic, 2) naturalistic and causal, 3) phenomenological/hermeneutic....(Heelan, 1989). Therefore phenomenological issues are the challenge mainly of philosophy in considering perception theories, which directly brings fore the name of Merleau-Ponty and his position focusing on whole body's interaction with space, to acquire the full understanding of Being and its sense of disclosing space properties. As explained previously that terminology chosen by phenomenology is rather unique of its own understanding of “disclosing” space, rather than just “experiencing” or “passively perceiving” but through “actively getting involved” into it. Remembering Heidegger, it is possible to rethink issues like the “spatiality” of Being as its main aspect, and the uniqueness of the term “Being-in-the-World” implying the totality of the involvements of Being, which makes it impossible for phenomenology's view to discuss about a subject and his/her internal mental processes isolated from any daily life activities and the world all included through Being's activities.

In the following pages there will be focuses on Merleau-Ponty once again, to clarify his position in relation to speech and language issues, and to prepare the basis for architectural representations other than conventional drawings for helping the construction process.

3.2.2 Cognition

Among many other psychological approaches -like behaviorist, empiricist, etc. - of its time Cognitive psychology, investigating the internal mental processes of thought such as visual processing, memory, problem solving, and language, has also been claimed to have relations with architectural field. Considering the arguments of this dissertation the focus will be given to the schematic structure observed in it; as it has actually been possible to see the deep marks of Kantian systematic thinking and schematic structure even in relatively more contemporary works which fall under the area of Cognitive psychology.

Similar to stages of Kantian system explained in Chapter 2, Neisser (Neisser, 1967) explains that the term “cognition” refers to all processes by which the sensory input is transformed, reduced, elaborated, stored, recovered and used. It is concerned with these processes even when they operate in the absence of relevant stimulation, as in images and hallucinations. Such terms as sensation, perception, imagery, retention, recall, problem-solving, and thinking, among many others, refer to hypothetical stages or aspects of cognition.

The school of thought arising from this approach is known as cognitivism which is interested in how people mentally represent information processing. It had its foundations in the work of Wilhelm Wundt, Gestalt psychology of Max Wertheimer, Wolfgang Köhler, and Kurt Koffka, and in the work of Jean Piaget, who provided a theory of stages/phases that describe children's cognitive development. Cognitive psychologists use psychophysical and experimental approaches to understand, diagnose, and solve problems, concerning themselves with the mental processes which mediate between stimulus and response.

Ulric Neisser coined the term 'cognitive psychology' in his book published in 1967 (Cognitive Psychology), wherein Neisser provides a definition of cognitive psychology characterizing people as dynamic information-processing systems whose mental operations might be described in computational terms. Also emphasizing that, it is a *point of view* which postulates the mind as having a certain conceptual structure. Neisser's point of view endows the discipline a scope which expands

beyond high-level concepts such as "reasoning", often espoused in other works as a definition of cognitive psychology.

Considering his tendency towards information-processing systems, he claims that there are some similarities between Gestalt Psychology and Linguistics, though appears to be some differences in relation to the how they approach "structures", and how Gestalt would also be "lacking" in certain aspects.

3.2.3 Gestalt for Basics of Design

Contrary to traditional scientific methodology before the beginning of 20th century, which usually inclined to divide the object of study into a set of elements so that these could be analyzed separately, to reduce the complexity of this object, the school of Gestalt practiced a series of theoretical and methodological principles that attempted to redefine the approach to psychological research. Though not being the only one, Gestalt has been the most dominant theory to explain visual perception for artists and architects so far.

The focus of Gestalt theory was the idea of "grouping"; in structuring and interpreting a visual field or problem in a certain way (Wertheimer, 1944). The primary factors that determine grouping were:

- (1) proximity - elements tend to be grouped together according to their nearness,
- (2) similarity - items similar in some respect tend to be grouped together,
- (3) closure - items are grouped together if they tend to complete some entity,
- (4) simplicity - items will be organized into simple figures according to symmetry, regularity, and smoothness.

These factors were called the laws of organization and were explained in the context of perception and problem-solving.

Wertheimer was especially concerned with problem-solving. He provided a Gestalt interpretation of problem-solving episodes of famous scientists (e.g., Galileo, Einstein) as well as children presented with mathematical problems. According to him, the essence of successful problem-solving behavior is being able to see the overall structure of the problem. A certain region in the field becomes crucial, is focused; but it does not become isolated. A new, deeper structural view of the

situation develops, involving changes in functional meaning, the grouping, etc. of the items. Directed by what is required by the structure of a situation for a crucial region, one is led to a reasonable prediction, which like the other parts of the structure, calls for verification, direct or indirect. Two directions are involved: getting a whole consistent picture, and seeing what the structure of the whole requires for the parts."

3.2.4 Gestalt Psychology and Language

The Gestalt psychologists had innumerable examples to prove that the figure as a whole, rather than its parts individually or additively, determines what we see. Such phenomena as apparent movement, color contrast, the perceptual constancies, visual grouping, and physiognomic perception are cases in point. Similarly, linguists insist that the sentence as a whole, rather than its words individually or additively, determines what we understand.

The Gestalt psychologists made particularly effective use of *ambiguous figures* to illustrate the importance of structure. All figures are organized, with shape and contour, but the changing organization of a reversible one like the Peter-Paul Goblet ("Vase-human faces" figure) shows immediately how crucial this organization is. The directionality of the contours, and indeed the significance and depth of all parts of the picture, depends on the structure which is dominant at the moment. In the face of such an example, it would be difficult to maintain that structural organization is irrelevant to the process of seeing.

For Neisser, the commonalities between linguistics and Gestalt psychology were:

- The important role of ambiguous sentences and ambiguous figures in discussions,
- Similar reactions against "the behaviourists", "the associationists", and "the stimulus-response theorists".

The Gestalt psychologists were successful in many respects, and the importance of pattern and structure in perception is now generally taken for granted. Nevertheless, there is one point on which they are generally thought to have been mistaken. They were "nativists", believing that the perceptual processes were largely determined by necessary and innate principles rather than by learning.... We know that the effects of experience on perception are very substantial, and we tend to think of the Gestalt psychologists as "naïve" in this respect.

These impressive similarities between the new linguistics and the old Gestalt psychology should not lead the reader to identify the two. Apart from their different subject matter, there is a crucial difference of method between them. The Gestalt psychologists were never able to provide any satisfactory description or analysis of the structures involved in perception...In linguistics, by contrast, the study of “syntactic structures” has a long history.

The information processing approach to cognitive functioning, has been questioned by new approaches in psychology, such as dynamical systems, and the embodiment perspective.

Because of the use of computational metaphors and terminology, cognitive psychology was able to benefit greatly from the flourishing of research in artificial intelligence and other related areas in the 1960s and 1970s. In fact, it developed as one of the significant aspects of the inter-disciplinary subject of cognitive science, which attempts to integrate a range of approaches in research on the mind and mental processes.

The human body has long inspired artists, philosophers, musicians, and writers. Researchers in the psychological sciences, however, have only relatively recently begun to acknowledge the role the body plays in perception and cognition. With the general notion of cognition recently broadening to include its embodied nature, researchers' accounts of perception have increasingly come to include the body's special status as a window on the world and to accommodate the specific perceptual requirements for identifying, interpreting, and interacting with other bodies.

To guide the movement of the body through space, the brain must constantly monitor the position and movement of the body in relation to nearby objects. The effective piloting of the body to avoid or manipulate objects in pursuit of behavioral goals requires an integrated neural representation of the body (the ‘body schema’) and of the space around the body (‘peripersonal space’). Recent results from neurophysiology, neuropsychology, and psychophysics in both human and non-human primates that support the existence of an integrated representation of visual, somatosensory, and auditory peripersonal space. Such a representation involves primarily visual, somatosensory, and proprioceptive modalities, operates in body-part-centred reference frames, and demonstrates significant plasticity. Recent

research shows that the use of tools, the viewing of one's body or body parts in mirrors, and in video monitors, may also modulate the visuotactile representation of peripersonal space.

Leaving the schematic structures to another side, the embodiment approach has its rather unique position with Merleau-Ponty, another important name in phenomenology, who paid special emphasis on the "bodily" perception in contrast to the fanaticism for "visuality" in previous attempts, this includes linguistic aspects as well.

Without actually using the term rhetoric he puts special emphasis on speech, and for Merleau-Ponty, leaving a thought just as a thought will eventually lead it to "sink" into the unconscious, and this will mean that it would not exist even for itself. Therefore it should be spoken, either externally or internally, i.e. thinking is more like speaking to oneself even though it may happen silently at times or in form of writing.

He replied to Kant emphasizing the "experience" of thinking that a thought is indeed a part of the experience of thinking, in the sense that we presented our thought to ourselves through internal and external speech. He claims that thought 'moves forward' as an instant flash, but we then 'lay hands' on it and its through expression that we make it our own. The denomination of objects does not follow upon recognition; it is itself recognition. "When I fix my eyes on an object in the half-light and say: 'It is a brush', there is not in my mind the concept of a brush, under which I subsume the object, I am conscious of reaching that object...."(Merleau-Ponty, 1994)

This is an opposite to Kantian a priori, as an a fortiori situation is proclaimed. Thus speech, in the speaker, does not translate ready made thought, but accomplishes it. A fortiori must it be recognized that the listener receives thought from speech itself.

Merleau-Ponty stresses upon the restrictions based on an approach giving priority to understanding, therefore claims that we can understand more than what we actually know, because it is the listener who gives the words and sentences their meaning and meaning is not an 'alien' import, and if it were otherwise the consciousness would know everything in advance and would not be able to learn. The ability to learn actually proves that we have the power to understand over and above what we may have spontaneously thought, and this situation should also explain the critical role of

communication. For Merleau-Ponty (1994), it seems at first sight true that consciousness can find in its experience only what it has itself put there. Thus the experience of communication would appear to be an illusion. A consciousness constructs –for x- that linguistic mechanism which will provide another consciousness with the chance of having the same thoughts, but nothing really passes between them. Yet, the problem being how, to all appearances, consciousness learns something, the solution cannot consist in saying that it knows everything in advance.

But nevertheless he finds poetry may be a bit more difficult to understand at first only, as it includes words with other than their meanings common to everyone all the time....

Involving time into the description Vesely explains that, the critical phenomena in the formation of space are temporal and spatial continuities of experience. (Vesely, 2004) Adding comments on topological relations seem crucial here, as it was defined by Piaget, the notion of topology is more important than Cartesian space. In his introduction to the Child's Conception of Space, he challenges what he defines as Kant's Space “as an a priori structure of 'sensibility'” and Poincaré's Kantian ascription of the formation of spatial concepts to sensory impressions. He does this on the grounds that our derivation of co-ordinate systems from embodied knowledge of vertical-horizontal axes in physical experience are quite a late and complex connection, only fully developed in the child by the age of eight or nine. By contrast, he presents evidence that the mapping or representation of the physical world by non-metrical, non-axial proximities and semantic relationships occurs at a much earlier age. We may take issue with Piaget's interpretation of Kant's *pure intuition*, which is Kant's name for the *form* of sense-intuition not the *matter* of sense-intuition, knowledge, which is not grounded in sensation at all. But it is hardly important to Piaget's principal objective; to dispel the adult “misconception” regarding the relationship of spatial *perception* to spatial *representation*, -spatial representations are derived directly from perceptual knowledge-. It is his contention that during the development of representational space, representational activity is projected back on to perceptual activity. In other words, as we evolve and learn new spatial representations (axial coordinate systematic understandings of space being an example), they effectively become assimilated in our knowledge of space in ways that are no longer separable from perceptual knowledge.

Orientation is not something that can be determined by one of our senses. As Merleau-Ponty declares, it is not the body considered as a thing in objective space, but as a system of possible actions, a virtual body with its phenomenal 'place' defined by its task and situation. (Merleau-Ponty, 1994) Therefore, spatiality of Being in fact is not depended on the position or direction, continuity of the actual and possible structures of the world is what describes where the body belongs to.

Getting back to architectural arguments, according to Vesely, the ability to reconcile the acquired inverted vision with the situational structure of the human body, points out to a deeper problem when dealing with situation, which is related to our ability to become situated on provisional grounds, even when lacking a fundamental 'ground' of spatial or temporal reference. The example from inverted vision also means to show that such a basis is far from being immediate; it is constituted in the process of a search within the actual space and comes about as a correlation between different levels of representation such as visual, tactile, and so forth. Vesely elaborates on situation, and the phenomenon of being situated, as an example of how we contextualize spatial knowledge, and on which basis; and on how a particular point of reference allows us to situate spatial knowledge. In the course of the argument, Vesely successfully demonstrates that what constitutes the fabric of situation is a continuity of reference and experience through different forms of articulating spatiality down to an implicit structure that itself is neither visual nor tactile, and is only potentially articulated in the objective realm (Vesely, 2004).

Vesely's argument on the epistemological process of being situated develops in terms of an analogy to the formation of the visual field. And it takes the organic ability of sight only as a point of departure to the phenomenon of vision, i.e. what one is able to recognize and know out of visual perception. Accordingly, the natural process of seeing is shown to be a result from learning. Vesely presents the example of inborn conditions of blindness treated through surgery, where sight itself only emerges after a painful stage of learning, and without which, the recently-acquired sense of sight would be unable to detach or recognize individual objects out of a 'visual field'. Vesely describes how the integration of the newly-acquired sense relies on the fact that the world of the blind is already structured, not only in terms of temporal sequences, but spatially; and that the reconciliation of the new ability of sight takes place on an already structured ground of existing objects and spatiality.

Perception, such as visual or tactile, is reconciled upon an implicitly structured ground.

As a result, the continuity of reference is critical between the natural and artificial, or between natural and simulated reality. This brings us close to the essence of representation and architectural space, and shows us its somehow being a bit restricted by the possibilities of representation. (Vesely, 2004)

It is also thought provoking for architects, whose traditional representational conventions of descriptive and projective geometry considered through this lens of space in relationship to development and learning, have the potential to influence, perhaps straight jacket, the space of their perception, and hence, through re-representation, their conceptions. Theoretical concepts of morphology have affected some form of release in architecture, and for this we have to go back to Antoni Gaudi's work in the early twentieth century, not merely more recent digital enactments, but these too can become formalist conventions once we move away from their deeper implications.

This capacity to “learn” space through an amalgam of sensory feedback and representational overlay, also allows the space of our perceptions to change. Nothing illustrates this more clearly than the demonstrations in perception by Ames, for instance, the Ames room, which produces the visual illusion that people standing at either end of the room are dramatically different in size. Gregory Bateson provides a long description of interacting with another of the Ames experiments, the trapezoidal room. When inspected objectively from above this was a box of strange trapezoidal shape but when viewed through a peephole in the side of the box using a pair of prismatic glasses, its interior space appeared perfectly rectangular by virtue of the position and shape of windows painted onto the inside of the box. When asked to hit first the right hand end wall with a stick protruding into the box, then swing it round to hit the left hand end, the exercise appeared simple but would be prevented each time by the stick hitting the back wall. Bateson describes how, even after 50 attempts he could not overcome his visual perception to make the right correction pulling back the stick and always hit the back wall but, in the process, he improved, the stick swung further, and most interestingly, the room became more visually trapezoidal in doing so. (Burry, 2010)

3.3 Geomerty, Architectural Space and Representation

3.3.1 General Introduction

Several investigations on the different use of the term space have tried to show the distinction between lived and geometric modes of space, and expressed the varying intentions behind the attitudes mostly regarding space as geometry versus space as experience, some of which adopted the phenomenological point of view claiming that it was able to perceive the crises brought by supposedly value-free inquiry. As explained in the previous sections, phenomenological approach was opposing the Cartesian world view and asserting the primacy of the lived-world with everyday experiences. It was suggested by several people, starting with Heidegger in the list and going on with Max Weber, Vesely, at all, that the lived-world bring us closer to pre-scientific experience of our world; that is before we have learned to detach ourselves from it and view it as having a separate objective existence. Remembering from the previous sections; Heidegger claims that there is no 'being' apart from a 'world'; rather there is the first and only 'Being-in-the-world'.

Applying phenomenological view to architecture, Norberg-Schulz and others have focused on a separation between lived-space and geometric space, and differentiated spatial experience from approaches to abstract and measured space based on geometric descriptions. Even though, Norberg-Schulz and his successors, who interpreted phenomenology and architecture together, paid high respect to world's infinitely complex, thoroughly socially and culturally conditioned nature, they confusingly considered lived-space at different scales and in terms of zones, i.e. expressed certain hierarchies and some sub-divisions in it. This will be discussed in the following parts of this dissertation, as the particular emphasis here, will be paid to the critical distinction between these two split ends resulting from the experience of place and the geometric simulations, corresponding the previous sections on world view and schematic perceptual systems contrasting phenomenology's disclosing space through whole body's involvements in it.

In contrast with lived-space, geometric space, proving to be accurate, is reduced to coordinates and lines in technical drawings. It is a representation of a set of relationships among the locations with extracted values. In other words, geometric

space is a universal language of spatial representation with guaranteed predictive values. (Dovey, 1993)

Special emphasis should be paid on the word ‘representation’ here to reflect on the forms of architectural representation and their critical position in some contemporary discussions. For Rattenbury, architecture is discussed, explained and identified almost entirely through its representations, and indeed, these representations are often treated as though they were architecture itself. Huge status is given to the imaginary project, the authentic set of photographs or the eminent critical account...we discuss and even define architecture (as opposed to building) through an elaborate construct of media representations: photography, journalism, criticism, exhibition, history, books, films, television and critical theory....historians, journalists, theorists, computer-game designers, film-makers, architects and academics....Together, they build up a critical picture of the construct of partial representations on which our understanding of architecture is based.” (Rattenbury, 2002)

This chapter examines the historical process of the separation between the two ends: geometric and lived-space, existing and ongoing results of it, and the critical accounts given about this situation including several approaches observed so far as well as arguments for future directions with special emphasis on ‘representation’. Repeating from Rattenbury, “...It (architecture) is absolutely rooted in ‘the thing itself’. Yet it is discussed, illustrated, explained –even defined- almost entirely through its representations.” Continuing the separated ends in description of space and their positions in architectural applications she explains that, the promotion of the as-yet-fictional or always-to-be-fictional project is both the architect’s tool and often, initially, their stock-in-trade. But built architecture is then recorded, discussed, designed and taught through further representations: photographs, articles, books, critical accounts and, sometimes, retrospective drawings.

For ‘architecture’ is not just a broad, generic name we use to describe the built or inhabited world. It is a construction, a way of understanding certain parts of the built or inhabited world as being fundamentally different to other parts. It is to do with a constructed understanding of quality, class, interpretation, intention, meaning. And this seems to be not just conveyed but actually defined by this complex system of media representations...”(Rattenbury, 2002)

Considering various possible ways of architectural representation, geometric representation cannot be investigated without incorporating discussions on “virtual reality” as well as efforts on dynamic ways of representing architecture by taking films and some other forms of art into critical discussions.

Whatever the efforts shown and attitudes taken towards architecture’s representation “...all forms of representation have their own bias, their own preferences, their own cultures, their own economic, cultural and personal drives. Representation will always be partial.” (Rattenbury, 2002) Perez-Gomez in parallel to this view claims that, tools of representation are never neutral. They underlie the conceptual elaboration of architectural projects and the whole process of the generation of form...Today the process of creation in architecture often assumes the design and the representation of a building demand a perfectly good ‘set’ of projections. These projections are meant to act as the repository of a complete idea of a building, a city, or a technological object...the architectural profession continues to identify such projective architectural artefacts as reductive. Representations in architectural practice are easily reduced to the status of efficient neutral instruments devoid of inherent value... (Perez-Gomez,2002)

This chapter includes the search on the “instrumentalisation” mentioned in the above sentence as the first step in examining geometric representation and follows with the investigations of its consequences. It develops further with relating geometric representation to the other forms of representing architecture...

3.3.2 Instrumentality and Fragmentation

The critique of Modernism that so preoccupies contemporary architectural discourse has entailed a fundamental re-interpretation of the history of Western architecture. The critique and the re-interpretation together have led to the discovery that architecture, initially and throughout most of its history, was understood as anything but a functional or formalist undertaking. It was found that until very recently, *all* architecture – not only (albeit especially) that of church or temple buildings- was essentially religious, in as much as it confounded the immanent and the transcendent in built, corporeal reality. Architecture was like the human body itself, which – as Vitruvius demonstrated with all the rigour and certainty of geometrical proof- was

bounded by both the chthonic, terrestrial mystery of the circle and the celestial, ouranian rationality of the square.

The discovery or rather the *re*-discovery, that such a fusion was the essential dimension of architecture until the 18th century, has been accompanied by the bitter realization that, in a world where the evocation of transcendence plays virtually no legitimate role in discourse, the fusion of the immanent and the transcendent in architecture appear to have become impossible. (see Rykwert) The square and the circle – and indeed all that made architecture the paradigm of meaningful human undertakings throughout Western history- have, it is claimed, been instrumentalized to the point where the possibility of meaning in architecture has been all but eliminated.

Sight is the source of knowledge and the chief of the senses because, according to Plato (2008), it enables people to see the sky and observe the heavenly bodies through which are revealed the notions of time and number. God brought the sun, the moon, and “the five other stars” (the known planets) into existence so that time “might be born”.

Thus the stars, into which human souls are sown or to which they are attached as chariots, are referred to in the *Timaeus* as *organa chronou*, the organs of time. In narrating the myth of Er, at the end of *Republic*, Socrates tells Glaucon (whose name, incidentally, means bright, or seeing, one) that human souls, having chosen their fates and drunk of the River of Forgetfulness, are then discharged upwards to their birth “like shooting stars” (Plato, 2007). The description of the human souls, like the description of sight, is decidedly male in its imagery. The attachment of the human souls to stars that, as the “organs of time”, let time appear, would seem to imply a partnership between people and stars in the revelation of time. Because of their attachment to the heavenly bodies, humans too are “organs of time”. But as Merleau-Ponty has insisted in our own century, the human person does not create or produce time, any more than, for Plato, the sun, the moon, and the planets created or produced it. Time appears *through* the person or the stars. He says subject cannot create time any more than his heart beats, and he is not the initiator of the process of temporalization.

“Time flows through me, whatever I do. Nevertheless, this ceaseless welling up of time is not a simple fact to which I am passively

subjected, for I can find a remedy against it... We are not in some incomprehensible way an activity joined to some passivity, an automatism surmounted by a judgement, but wholly active and wholly passive because we are the upsurge of time.” (Merleau-Ponty, 1994)

3.3.3 Projection and Composition Dialogues

During the last two decades, Together with the concerns mentioned, at the end of the 18th century, new methods of geometry as well as new projection systems started to be incorporated into the architectural works widely. Robin Evans provided special points related to projection through the eyes of an architect. Perez-Gomez’s special interest in the European crisis and its results in architecture were among the most examined leading sources.

Robin Evans acknowledges, “Geometry has an ambiguous reputation, associated as much with idiocy as with cleverness”. He contrasts geometry that is largely stolid and *dormant* (the geometry of the shape of buildings and the shapes of their drawings on the page) with areas where geometry is *active* in what he calls the space between and the space at either end. “What connects thinking to imagination, imagination to drawing, drawing to building, and buildings to our eyes is projection in one guise or another, or processes that we have chosen to model on projection”. We might now argue that projection may be on its way to join the reliable ranks of dead and dormant geometries that Evans identifies within the foundations of architecture. (Burry, 2010)

On projection

For theorist / historian Robin Evans, architecture is inextricably linked to geometry and in particular the technique of projective drawing. As he wryly notes in his earlier *Translation from Drawing to Building* the actual output of an architect are drawings. The buildings are translations from these drawings and often this resultant built form is as much constrained by drawing knowledge as by construction technology. His last book *The Projective Cast* builds on this observation to expose the history of architecture as a series of explicit or implicit references to developments in projective geometry. For Evans, Geometry is one subject, architecture another, but there is geometry in architecture... Geometry is understood to be a constitutive part of architecture, indispensable to it, but not dependent on it in anyway. He thinks that architects do not produce geometry; they just consume it. Such at least would be the

inevitable conclusion of anyone reviewing the history of architectural theory. He concerns that several key Renaissance treatises commence with a brief résumé of geometric figures and definitions borrowed from Euclid: point, line, plane, triangle, rectangle and circle... (As in the case of Serlio)...buildings could and did not exist without it (the foundations), a foundation in that geometry offers certainty in situations beset by doubt.

Evans explains that foundation should be firm and therefore the geometry needed for it was a dead geometry. Because, the job of a foundation is to be as firm as a rock and it is supposed to be inert. Dead things are easier to handle than live ones; they may not be interesting but they are less troublesome. From the point of view of the architect seeking firmness and stability, the best geometry is surely a dead geometry, and perhaps that is what architecture is made with:

What dead geometry means is an aspect of geometry no longer under development from within. Triangles, rectangles, and circles as defined in Euclid have been pretty well exhausted as subjects of geometrical enquiry. As these elements lose their mystery, interest in them subsides, but in this state of devaluation they become more valuable elsewhere because their behaviour is completely predictable. Consequences can be foreseen. Dead geometry is *an* inoculation against uncertainty. (Evans, 1995)

Architectural propositions are no longer necessarily expressed in the first instance as two-dimensional inscriptions of projected three-dimensional geometrical objects. The traditional dressmaker's pattern translates the three-dimensional intentions onto a two-dimensional page of tissue thin paper but includes several variations through alternative traces for different sized or detailed garments. In a similar way, geometrical architectural models constructed using logical relations can imply an infinite field of possible three-dimensional configurations from a simple graph of relations. Usually we first see these possible configurations, or a few of them at least, translated for us to virtually manipulatable three-dimensional images in our computer monitor. Thus, we see geometrical instances derived from the model. But to "see" the model itself, we must resort to much more abstract representations: scripting language, graphs of nodes and edges. (Burry, 2010)

These are new ways of seeing and knowing. Donald Schön (1987) gives us three types of seeing for designing: literal visual apprehension, appreciative judgments of quality, and apprehension of spatial gestalts. All three are potentially compromised as we move into model spaces that can literally be experienced as having as many

spatial dimensions as they have variable parameters. These are not visible nor readily visualizable spaces. With reference to Nigel Cross' warnings about failure to recognize the distinct nature of design in relation to science we must now ponder how this new space is to be assimilated into design's own distinct "things to know, ways of knowing them, and ways of finding out about them". Cross (2007) has written that the central concern of Design is the conception and realization of new things and at its core is the language of modelling. This language is now changing. If this change is orchestrated through tentative appropriation from mathematics and the prior experiences of computer science, should this not be an open, knowing and selective act of adoption rather than unconscious assimilation?

Any geometrical relationships formally expressed, may be used to link building function ("performance") and building context to *shape*. Husserl defines geometry as "all disciplines that deal with shapes existing mathematically in pure space-time". Shape is never absent from architecture and thus Evans can write "*geometry is in architecture*". Shape is far from all that we seek from architectural models but without shape, it is not architecture and can never be built.

The architectural model constructed as logical and geometrical relations over geometrical objects is invisible. It is, in itself, an extensive and, in general, geometrical, space but it defies holistic representation through Euclidean means. How are designers who rely heavily on their own powers of visualization and intuitive qualitative spatial engagement, to know, let alone share, the space of the model? This cannot be mapped in any sensorially accessible fashion except through the sampling of individual instances of the geometry. It cannot be visualized meaningfully in three or four dimensions except through animating or imagining transformations along particular, selective motion and/or morphing pathways in the space. (Burry, 2010)

Some mathematicians have even proposed that geometry, together with the rest of mathematics, should be reclassified either as a humanity or as an art, since it is said to be guided by an aesthetic sense...The role of intuition in mathematics has also been extensively discussed over the past century. As a result, many professional mathematicians are not only possessed of the idea that the ultimate justification of their work is not mere truth but beauty; they also regard intuition as essential to the performance or appreciation of mathematics of any sort. There is no need to justify

these ideas. I only want to present them as running counter to the ordinary understanding of what geometry is, and running parallel to the ordinary understanding of what art is.

Historian as draftsman detective, Evans engages drawing in his own text, culminating in a final diagram of the relationships between the designed object (realized building) and projective geometry. In this diagram "Projection and its analogues" (Fig. 3.6). Evans proposes that all architectural activity - thinking, sketching, building and evaluation - is carried out via, in his words, "projective transactions".

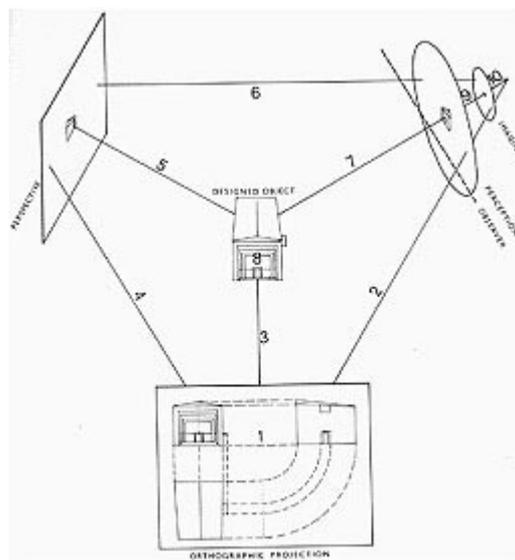


Figure 3.7: Projection and its analogues, adapted from Evans (1995)

Within this diagram the idea forms as an internalized 'picture' (9,10), it is explored via the architectural sketch (2,4,6), sold to the client via perspective drawing (5) and realized by orthographic drawings (3). The 'designed object' (8) is but one node within this tetrahedron of projective transactions - the majority of creative activity is spent *describing* the architectural object via drawing. Evans diagram makes explicit the separation between the creative activity of architects and the end result of these activities - the realized architecture.

Evans' thesis is an admirable *history* of architecture and his diagram a useful summary of architectural activity in which drawings is the dominant activity. While Evans is aware of the closure implicit within such diagrams and proposes it *merely* as a tool to summarize his thesis, in his words a "a reasonable good rough guide", the

particular closure is the exclusive preoccupation with drawing as the medium for conceiving and developing architecture: physical models are accommodated within Evans' thesis as intermediate modes which require translation via projective drawing; the observation that since the advent of cinema we have had successive generations whose experience of vision has been dominated by the mobile image is not addressed; the fact that by the early nineties computers were increasingly prevalent in architectural studios does not deserve a mention. As an investigation of the influence of geometry via media it is a history that stops with the advent of photography.

Composition and Projection

Architect's attitude to this stabilizing geometry has always been two-faced. Toward the lay world its presence is traditionally been advertised with pride, while within the profession architects tend to be suspicious of its power over what they do. Its value may be in its deadness, but if it is not kept under control it may revive, like a monster, or the morbidity may spread like a disease.

The ideal I of a vital and creative art supported on the dead certain truth of geometry. The very statement is enough to make us think twice. Is the geometry in architecture really so reliable? It is, as we shall see, difficult enough to say where the geometry in architecture is exactly. Reports come from several locations. Either it is mobile, which is a sign of life, or it is multiplied and harder to categorize.

It fits neatly with neatly with the perception that geometry is a rational science, while architecture -the art of architecture- is a matter for intuitive judgement.(Evans, 1995)

Some mathematicians have even proposed that geometry, together with the rest of mathematics, should be reclassified either as a humanity or as an art, since it is said to be guided by an aesthetic sense...The role of intuition in mathematics has also been extensively discussed over the past century. As a result, many professional mathematicians are not only possessed of the idea that the ultimate justification of their work is not mere truth but beauty; they also regard intuition as essential to the performance or appreciation of mathematics of any sort. There is no need to justify these ideas. I only want to present them as running counter to the ordinary understanding of what geometry is, and running parallel to the ordinary understanding of what art is.

For Evans, geometry does not always stabilize architecture; that the geometry in architecture was not always dead at the time of its employment, although it may have died later; and that in architecture expired geometry sometimes gained a life after death. They show also that the perception of geometry's role has been vastly affected by a collective oversight. The first place anyone looks to find the geometry in architecture is in the shape of buildings, then perhaps in the shape of the drawings of buildings. These are the locations where geometry has been, on the whole, stolid and dormant. But geometry has been active in the space between and in the space at either end. What connects thinking to imagination, imagination to drawing, drawing to building, and building to our eyes is projection in one guise or another, or process that we have chosen to model on projection. Composition, which is where the geometry in architecture is usually sought, may still for convenience be considered the crux of the matter, but it has no significance in and of itself. It obtains all its value via the several types of projective, quasi-projective, or pseudo-projective space that surround it, for it is only through these that it can be made available to perception.

The distinction between composition and projection in architecture has its counterpart in mathematical geometry. First came a geometry whose idealities were well adopted to measuring of things. (Evans, 1995) This was organized into a consistent body of propositions by the Greeks and obtained its classic exposition in Euclid's *Elements*. Euclidean geometry was concerned with the ratios and equalities of lines, areas and angles. However abstract, however contemplative in spirit, however remote from practical application, it must surely have arisen from, and easily translates back into, the tasks of shaping artefacts, laying out buildings, and surveying land. Later came a geometry no longer concerned with measuring the intrinsic properties of objects: *projective geometry*.

Attention shifted, at first slowly and cautiously, from the object per se to its images: shadows, maps, or pictures. It is easy to appreciate intuitively that any rigid object will propagate a variety of possible images of itself in space, that these images will alter by continuous deformation, not by fits and starts, and that while there can be no fundamental image, we would nevertheless expect to recognize some kind of permanent identity from several such images. It is equally easy to appreciate intuitively the images of these objects are elastic. Though consistent in their

deformations, they do not conserve measured lengths or angles. In Euclidean geometry it is always as if the figures in the books could be applied like templates directly to a material, whereas the figures of projective geometry belong to some absconded, mercurial item that remains out of reach. The key realization in the development of the projective geometry was (Evans, 1995) that while figures deform according to the point of view, lines of sight do not deform. So rigidity is transferred from objects to the medium of their transmission, which is most easily imagined as light.

For several centuries (from the fifteenth to the eighteenth) the development of projective geometry derived some of its impetus from architectural procedures and even from architects, thinking of the relation between projection and architecture.. It could be argued that the most intense interaction between the two subjects occurred during the seventeenth century, but actually the history of architectural projection is just beginning to be investigated. It has played a very small part in the development of architectural theory. Only two well-known architects gave it a significant place in their writings –Philibert Delorme and Guarino Guarini- and modern commentaries (p. xxxiv) on their work have consistently ignored or marginalized this aspect of what they did...Except Gideon, as he praised Guarini as the founder of descriptive geometry even before Mongue, who is known for discovering descriptive geometry what constitutes the principles for technical drawings as plans, elevations etc in orthographic methods. (Gideon, 1967). And Mcquillan's deep research and comprehensive reflections of Guarrini displays the nature of such Baroque spaces.(McQuillan, 1991)

Either projection is acceptable because it is transparent, or it passes between the creative imagination and the item created like a dark cloud, reinforcing the already enormous prejudice against anything technical....And are we in architecture not prejudice against geometric drawing?... (like writing and speech) (Evans, 1995)... We must not assume that a certain resemblance gives us to leave to treat the two situations (architecture and literature) as identical, taking terminology, arguments and conclusions lock, stock and barrel from literary theory, plastering them onto architecture, and calling the result a theory of our subject. Likeness is not identity; orthographic projection is not orthography; drawing is not writing and architecture does not speak. (Evans, 1995)

A lot can be learned from literary theory, not least circumspection, also a sufficient confidence that the subject for which a theory is being sought is itself worthy of some modest consultation in the matter. In architecture the trouble has been that a superior paradigm derived either from mathematics, the natural sciences, the human sciences, painting or literature has always been ready at hand. They have supplied us with our needs at some cost... We beg (borrow?) our theories from those more highly developed regions only to find architecture annexed to them as a satellite subject. Why is it not possible to derive a theory of architecture from a consideration of architecture? Not architecture alone but architecture amongst other things. If we take the trouble to discriminate between things, it is not just to keep them apart but to see more easily how they relate to one another. Architecture can be made distinct but it is not autonomous. It touches so much else, and across its borders there is continuous (Evans, 1995) activity. A crucial source of intelligence for such a theory would therefore be the numerous transactions between architecture and other topics, for instance geometry.

Metrical geometry is the study of solids, and projective geometry that of light.”(Quote from Henri Poincaré) Metrical geometry is a geometry of touch (haptic), while projective geometry is a geometry of vision (optic)...but architectural composition is such a peculiar enterprise: a metric organization judged optically, it mixes one kind of geometry with the other kind of assessment. We are not interested in architectural projection and its relations to mathematical geometry, but between the projection and architecture.

Design is action at a distance. Projection fills the gaps; but to arrange the emanations first from drawings to buildings, then from buildings to the experience of the perceiving and moving subject, in such a way as to create in these unstable voids what cannot be displayed in designs - that was where the art lay.(Evans, 1995)

As explained in the introduction, the pre-perspectival world, the relationship between man's way of conceiving the universe and his way of expressing this before the Renaissance should be a matter of issue for a start. The Renaissance, its giving a re-definition to the man and its position in the world affects architecture as well as arts in general. A new world order's reflection to the methods of representation appears with a major difference: that is the use of linear perspective. A bit similar to computer menu's of CAD programs orthographic projections are based disembodied

subjects operating with geometries of orthographic axial systems of a Cartesian world and they fit well within the process of Modernity's detaching the subject from a living space but perfectly representable through geometric schematic systems reflecting the underlying schematic theoretical systems of perception as explained before.

After the revolution coming with the Non-Euclidean methods of geometry, and Einstein's new model of space there have been certain efforts trying to involve the dimension of time in several ways into architecture, as a fourth dimension. The conflict between the being orientable and non-orientable spaces in physical sciences, appears differently in architecture. Because of not fully including the subject into arguments as it is the case in some philosophical, and architectural positions interested in the topic from the point of relatively passive involvements, which are other than producing art work or designing as an architect. There is an emphasis in perception rather than creation. How Non-Euclidean has become relevant to architecture, how far has geometry's re-definition of itself wanted to be reflected into the task of an architect; tracing the clearly visible directions, pose special problematics. An unfamiliar conflict between Buckminster Fuller's choice of dealing with geometry and Peter Eisenman's comments on 'line has been transformed into a vector' as in computer programs constitutes the separation of an end-product and an end-game. Trying to incorporate motion into architecture at different stages with different claims seem to be interesting. But how far this has been taken is important, and Marcos Novac's "audible spaces" seem to be trying the furthest end in involvements with space beyond visual contact.

We seem to come to a stage that recognition of the importance of all other senses and not only visual aspects domineering architectural design problems and therefore representation of it. Referring to linguistic problems related Vesely claims that geometry, including the geometry of light, was at the end of seventeenth century already beginning to play a decisive instrumental role in a new way of thinking in the emerging modern natural science. He says that, geometry was only one aspect of Baroque representation; another, equally important, was rhetoric. Understood in its broadest sense, rhetoric represents the whole field of culture as far as it can be directly or indirectly articulated through language. And for him, such articulation includes also *the language of geometry*. (Vesely, 2004)

3.3.4 Communicative Space

3.3.4.1 Authenticity and Redescription of Place

Together with a few other famous texts like “The Origin of the Work of Art”, “Man Dwells Poetically” and “Building, Dwelling, Thinking”, Heidegger also talks on disclosing place in “Art and Space” (Heidegger, 1973) , here, by especially focusing on the issues of “space” and “embodiment”.

He starts stating some questioning about the authenticity and how to find special character of space as usual to him, and tries “to listen” language for his aim, by focusing on “clearing-away (*Räumen*)”. He explains that “clearing-away” means *to* clear out (*roden*), to free from wilderness and “clearing-away” brings forth the free, the openness for man’s settling and dwelling. With “clearing-away” places are released toward the “fate” of dwelling, and man turns either preservation of home or faces with the brokenness of homelessness, therefore with this clearance “a god appears” and “locality” is brought forth to prepare the ground for dwelling:

Clearing-away is release of the places at which a god appears, the places from which the gods disappeared, the places at which the appearance of the godly tarries long. In each case, clearing-away brings forth locality preparing for dwelling. Secular spaces are always the privation of often very remote sacred spaces. (Heidegger,1973)

Clearing-away is release of places, but in clearing-away a happening at once speaks and conceals itself. This character of clearing-away is all too easily overlooked. And when it is seen, it always remains still difficult to determine; above all, so long as physical-technological space is held to be the space in which each spatial character should be oriented from the beginning. (Heidegger, 1973)

How does clearing-away happen? Is it not making-room (*Einräumen*), and this is again a two-fold manner as granting and arranging? First, making-room admits something. It lets openness hold sway which, among other things, grants the appearance of things present to which human dwelling sees itself consigned. On the other hand, making-room prepares for things the possibility to belong their relevant whither and, out of this, to each other.

Place always opens a region in which it gathers the things in their belonging together. Gathering (*Versammeln*) comes to play in the place in the sense of the releasing sheltering of things in their region. And the region? The older form of the word runs

“that-which-regions” (*die Gegnet*). Through it the openness is urged to let each thing merge in its resting in itself. This means at the same time: preserving, i.e., the gathering of things in their belonging together.

The question comes up: Are places first and only the result and issue of making-room? Or does making-room takes its special character from the reign of gathering places? If this proves right, then we would have to search for special character of clearing-away in the grounding of locality, and we would have to meditate on locality as the interplay of places...We would have to learn to recognize that things themselves are places and do not merely belong to place. “Place is not located in a pre-given space, after the manner of physical-technological space. The latter unfolds itself only through the reigning of places of a region.” (Heidegger, 1973)

He focuses on sculpture as the art form and starts questioning its relation with the embodiment. Heidegger at this stage needs the clarification between volume and space, and he declares that volume no longer demarcates spaces from one another, it belongs to the technological natural science and will have to lose its name. The place seeking and place forming characteristics of sculptured embodiment would first remain nameless. “And what would become of the emptiness of space?..” Emptiness is not nothing for Heidegger, it is also no deficiency. In sculptural embodiment, emptiness plays in the manner of a seeking-projecting instituting of places. “...As one of the graphic arts, sculpture: an embodying bringing-into-the-work of places, and with them a disclosing of regions of possible dwellings for man, regions of the possible tarrying of surroundings concerning man.”

Sculpture can be the embodiment of the truth of Being in its work of instituting places. Heidegger’s comment on body’s relation to space result in a far different end by suspecting its relation with truth, he insists that unconcealment of Being is not necessarily dependent on embodiment. He refers to Goethe for a final explanation by quoting from him that what is true does not always embody itself but hovers about and evokes harmony as if it floats through the air like the solemn and friendly sound of a bell. By effectively using the metaphor of a bell, here reminds all other aspects of perception, making one rethink sound, smell and haptic issues plus memory connections all over, to result in a successful “clearing-away”.

3.3.4.2 Rhetoric and Space

Focusing on Baroque culture

History shows quite clearly that rhetoric was not only a discipline of persuasion but was in fact the creative soul of Baroque culture. Its foundations in the metaphoricity of language gave it the power to communicate across the most distant levels of reality, from earthly phenomena to concepts and abstract ideas. In the hierarchy of communication, there was always a critical zone of ambiguity and tension between the invisible and visible sphere of reality. This tension, inherited from the past, became acute between the sixteenth and seventeenth centuries. How critical the tension became in that period is reflected in the considerable literature that grew from the tradition of hieroglyphics and *impresa*, which found its fulfilment in the articulation of emblems, allegories, symbolic images, and iconology. All these modes of expression were motivated by the same questions. Is an idea an image or can it be? Can an image itself be universal? The key to the relation between idea and image is not only historically but also ontologically the *impresa*, a figure of representation that consists of a carefully chosen and structured image altogether with a short text? Both bearing on the same meaning. In a sense, the *impresa* is always a metaphor interpreted visually. What makes it possible is the inherent iconicity of metaphor which can be same(?) as a discourse between the invisible meaning of concepts and its manifestation in the properties of things, in human characteristics, in events, and so on. We may conclude that each thought is potentially an *impresa*, because its intuitive content always refers by implication to a corresponding image. Issues related to metaphor are crucial for Vesley (2004):

...The possibility of establishing a link between such distant realities as ideas and the property of material things rests largely on metaphorical nature of human experience and communication. However, as already indicated, metaphoricity has its source not in the sphere of poetics or rhetoric but in the tacit world of everyday life. I noted that the world is articulated primarily on the prereflective level and in the spontaneity of our “communication” with the given phenomenal reality and cosmic conditions.

As for Vesely, Perez-Gomez and many architects search for an answer through metaphor and its inclusion in architectural discussions. Architecture, claims Perez-

Gomez, has a role as a stage for perpetuation of human culture, and this role should be well recognized and defined. Architect's work as a work of imagination and as reconciliatory action point to a referent other than itself, and for new paradigms of communication approaching the ephemeral nature of embodied perception and the primary orality of language, "...architecture may indeed be able to carry intersubjective values, convey meaning through metaphor, and embody a cultural order beyond tyranny or anarchy" (Perez-Gomez, 1994)

Communication itself has no identifiable origin. It takes place in a world that is already to some extent articulated, acting as a background for any possible communication or interpretation. Most important, communication is always a dialogue between the new possibilities of representation and the given tacid world, described in modern hermeneutics as an effective history (*wirkungsgeschichte*) (Gadamer, 'the principle of effective history' in *Truth and Method*) The tacid world is never fully accessible to us. Always to some extent opaque, it can be grasped or represented only through its symbolic manifestations. At the same time, and particularly because of its tacid nature, it is a source of identity and relative stability of meaning over time. Meaning is preserved in the continuity of reference to primary symbols, or hierophanies, which are as a result always symbolically present in the tacid world. (Vesely, 2004)

The process of symbolization follows closely the structure of phenomenal reality and for that reason is also bound to it. This "bound" character of symbolism –its adherence to reality- makes all the difference in distinguishing between a symbol and a metaphor. A metaphor is a free invention of discourse, whereas a symbol is bound to the configuration of the cosmos. (Ricoeur, *Figuring the Sacred: Religion, Narrative and Imagination*) The symbolic articulation of the tacid level of the natural world is a precondition of any more elaborate or explicit representation. Paradoxically, only through the *more explicit mode of representation* can we gain access to and become aware of the natural world. (Vesely, 2004)

The next chapter of the dissertation will therefore be dealing issues directly related to metaphor; its general description and some major comments made on it, including Heidegger's comments most significantly. As many writers, some mentioned above, relies on metaphor as a get out to architectural issues relating to technical issues of

the discipline, including its design strategies and representation systems among the problematic areas.

4. METAPHOR AND ARCHITECTURE

“How difficult it is... to refrain from replacing the thing with its sign, to keep the object alive before us instead of killing it with the word” (Goethe, in Seamon, 1994).

It seems that some of the important issues of this dissertation somehow combined in one sentence here. It is found in “Goethe’s Way of Science”; Seamon’s book trying to provide a phenomenological look into Goethe’s scientific works. Though Seamon’s phenomenological interpretation in his work on Goethe is valid, I believe Goethe’s above mentioned sentence also offers us some of the typical arguments to do with Modernity. We initially understand, as Seamon mentions that, Goethe is bothered about the process from *seeing* to *interpreting* (Seamon, 1994), but we can extend commenting further on, and say that the expression ‘seeing into interpreting’ also involves, ways of *representation* and *image* description, keeping the object *as vivid as possible*, restrictions coming from the linguistic problems and limited representations in *language* are also issues to tackle with.

4.1 Why Metaphor?

A summing up of previous chapters so far helps joining our main arguments to language issues: The rising position of “seeing”, is an important problematic regarding several issues in Modern period; following seeing, image, dominance of vision, and therefore increased place of geometrical descriptions are important issues in Modernity too, and they are deeply involved in the key problem with the understanding of world/universe. Following the rise of visual approach, this world/universe conception is affected by the separation of the world from daily life issues, beliefs and cultural values, etc, through the way how science describes it. A reading of *Kant’s synthesis*, in previous chapters, has helped us to better conceive the critical position of *seeing*, as well as its relation to *geometrical formatting* and subjectivity issues, which constitute the very basic notion of modernity. Remembering from earlier passages, subjectivity as explained by Bowie (Bowie,

2003.) meant subject-ivity, that is subject's being able to think rationally without referring to God or religion as the source. Again repeating from Kant chapter, intuition (*anschauung*- to look at), and its relation to archetypes and therefore to images, has also played the critical position for Modern thinking. Eventually, the separation of science and daily life and its relevant issues were described by Heidegger as the lost ground for Western Metaphysics.

For Rorty, three answers were given, in 20th century, to the question of how we should conceive of our relation to the Western philosophical tradition; which are the Husserlian (or 'scientific'), the Heideggerian (or 'poetic') and the pragmatist (or 'political') answers (Rorty, 1994). And it seems that, the place of metaphor has a critical point to be able to make this three partite classification.

On Husserlian view, philosophy is modelled on science, and is relatively remote from both art and politics. The Heideggerean and pragmatist answers are reactions to this familiar 'scientific' answer; the former turning away from the scientist to the poet, and the latter (as with Dewey) turning from the scientist's theory oriented approach to the engineer's and social worker's more pragmatic understanding, who use science and philosophy as tools, for making people more comfortable and secure.

Husserl thought of traditional rationalism and empiricist scepticism as two sides of the same 'objectivist' understanding and tried to place both within the framework of his own transcendental phenomenology. Heidegger agreeing with Husserl about the dangers of a technologized pragmatic culture, took his position further and saw pragmatism and transcendental phenomenology as merely two other products of the 'objectivist' tradition and thought that neither Husserl nor the pragmatists were radical enough to reach a thorough sense of self-understanding. While distrusting the idea that Platonic-Cartesian universal knowledge can be replaced with the (Baconian) dream of maximal control over nature, Heidegger was also not convinced with Husserl's attempt to see Galilean *techne* as 'founded' in something 'transcendental'.

Both Heidegger and pragmatists deeply suspected the visual metaphors which link Husserl to Plato and Descartes. Husserl and Carnap shared the traditional Platonic hope to ascend to a point of view from which the interconnections between everything could be seen. Both are philosophers of what Hilary Putnam has called "the God's-eye view". Heidegger's term for such attempts is 'the mathematical'. The

search for the mathematical, for a formal a historical scheme, was, in Heidegger's view, the hidden link between Husserlian phenomenology, Carnapian positivism, and the objectivist tradition. (Rorty, 1994)

In his famous description Rorty, puts metaphor, together with perception and inference, as the three ways in which we add a new belief to the previously acquired ones, and gives a through account of its critical role in separating his above description as a three-part classification. So metaphor plays the key role either to distinguish or to compare the three major approaches, namely: scientific, poetic or pragmatic.

Examining perception and metaphor relations, Mark Johnson's schematic approach seems a good line on this direction. Mark Johnson's book *The Body in the Mind* (1990) offers the claim that all thinking originates in bodily experience. A range of schemata formed during our early experience manipulating a physical world of surfaces, distances, and forces, lays the foundation of later; more abstract modes of thought. In presenting his argument, Johnson lays special stress on the qualities and dynamics of the image schemata, the (generally unnoticed) metaphoricity of the transformations' underlying abstract thought, and the new significance that should be attributed to the imagination, which is the general term Johnson wishes to claim for the mental processes he expounds. (Miall, 1997) Several problems in Johnson's account which limit its usefulness; reliance upon the spatial properties of schemata; a conflation of dead with live or poetic metaphors; and a neglect of other bodily influences on thought, especially kinaesthetic and affective aspects, limit the usefulness of Johnson's attempt to build on Kant's theory of imagination, and he is unable to overcome the formalism of Kant's theory.

Some contemporary architectural critics, like Vesely, Perez-Gomez and McQuillan, claim that without metaphorical understanding architecture can go nowhere in grasping its problems.

Many reflections of metaphorical groundings can easily be observed, on even computer generated modellings in architecture, trying to overcome the fact that mathematical applications without which they would not be in existence, they claim that the designers' aims are based on strong metaphoric content. As it was mentioned before, Marcos Novac, is a good example in defending his work on the base of metaphors whereas he has so much else to give architecture.

After underlining some architects' comments on metaphor from the different ends of architectural arena and today's critical scene, eventually going to Heidegger himself directly to see what he suggested about the way how we should treat metaphor's place in our conceptual arguments will make finalizing comments of the first part of this chapter. He really deserves a closer examination, as he is the propagator of the 'poetic' understanding in architecture and poetic dwelling, after all. Derrida, of course, needs mentioning regarding his involvement in deconstructivist understanding of Heidegger and his outstanding impact on architectural discourse, as well as leading others to look into the discussions on metaphor wider than before; by helping to see that it is actually not only dealing with poetry-philosophy relations is what actually necessitates examining issues about metaphor, but actually a quick look into more systematic approaches also reveals that metaphor was definitely necessary to represent such philosophical systems as well, as it was for Descartes and Kant.

This process would result in a discussion that, metaphor has been important both for metaphysics and hermeneutics, though in quite different ways. Neither of them would discharge metaphor, but would give different attributes according to their systematic/instrumental or phenomenological understandings. At the end of this chapter it will eventually be possible to see that a change from Kantian 'edifice' to Heideggerean 'house' is actually a key issue, and what *from 'edifice' to 'home'* sums up could well be the core in discussing Modernity.

A description for what we generally mean when we use the word 'metaphor' is needed to start with, and Ricoeur is a leading name to consult considering his extremely comprehensive work on metaphor, which presents viable visions on several aspects of the topic with great detail.

Linguistic issues and representing through language is another important problem in Goethe's above sentence. Though as far away from being visually representable as possible, language shows its critical position in Heidegger's second period too, in which he also deals with the other issues like art and architecture in a parallel effort to his encounters with language. It is mostly his second period, therefore, which gave the main impetus to some architects to look into establishing and developing the phenomenology of architecture.

Through his concerns on language, Heidegger tries to make us understand how we lost the plot to grasp the essence of Being, the world, the thing, the art work, dwelling, so forth. He describes language as a path to discover, and has been criticized severely by others like Derrida in the way how he looked at philosophical problems through linguistic issues. Some chapters of this study had to be on Heideggerean path-ology basically explained through his dialogues with Kant. Without a comprehensive comparison, it seems more difficult to demonstrate description of metaphysics and what issues related to this understanding of metaphysics bothers Heidegger, and of course, how this reflects on his comments on architecture, dwelling and art work. Even though we do not come across a major text dealing solely on metaphor written by Heidegger, his use of metaphors in his late works seems important. (Ricoeur 1991, Stellardi 2000, Kockelmans 1992, etc.)

It seems, therefore, necessary at this point to have a closer look into the some issues relating to metaphor and its use first, then examining Heidegger's own views on poetic dwelling will be useful. Poetic dwelling, his alternative to modern metaphysics and its reduction of the life-world to mere objectivity and static presence, vacillates between reference to factual life and a striving toward pure ontology. This articulates the event or occurrence, *Ereignis*, which gives an event definition apart from the specificity of what occurs. (Gosetti-Ferencei, 2004)

4.1.1 Description

To be able to give a definition of metaphor, Ricoeur is a very important name to consult as he offers a wide range of arguments in the area, and he is the one who is referred back to most often. Through eight studies on metaphor, Ricoeur (1991) begins with classical rhetoric, passes through semiotics and semantics, and finally reaches hermeneutics. The progression from one discipline to the other corresponds to changes of the linguistic entity chosen for consideration: the word, the sentence, and then discourse. His primary reference is to Aristotle "the greatest thing by far is to be a master of metaphor. It is the one thing that cannot be learnt from others; and it is also a sign of genius, since a good metaphor implies an intuitive perception of the similarity of dissimilars" (Aristotle, 2001, 2004). Continuing through Ricoeur, Aristotle's description of metaphor provides us with such points (Ricoeur, 1991):

- The definition of metaphor is the name or noun, not involving the idea of time,
- Metaphor is defined in terms of movement. The 'epiphora' of a word is described as a sort of displacement, a movement 'from...to'- phora: change with respect to location,
- Metaphor is the transposition of a name that is 'alien'; 'a name that belongs to something else', 'the alien name',
- The idea of *epiphora*, preserves the unity of metaphor's meaning and a typology of metaphor is outlined in the continuation of the definition.

If we could get back to the above sentence on *mastering metaphor* it becomes obvious that there are several things notable (Ricoeur, 1991):

- Metaphor becomes a verb, 'metaphorize'; this brings to light the problems of usage- process prevails over the result.
- The problem of use brings up that of 'appropriate' use. It is a question of 'metaphorizing well', of 'using in an appropriate way' the process of *lexis*.
- Since –and this is precisely the point- to metaphorize well cannot be taught; it is a gift of genius, of nature.
- The reason why one cannot learn to 'be metaphorical' is that to 'metaphorize well' is to 'see resemblance'. This would bring Ricoeur close to his most extreme hypothesis, that the 'metaphoric' that transgresses the categorical order also begets it.

It should be made clear that rhetorical and poetic functions of metaphor do not coincide. For Aristotle, "The language [*lexis*] of prose is distinct from that of poetry" (Aristotle, 2001, 2004) and (being unfortunate for Ricoeur) Aristotle notes that the theory of *lexis* is further ahead in poetry than in the field of public discourse. He tries to distinguish the use of metaphor in both fields before delving into the issues relating directly to poetry, and mentions the quality of metaphor which 'sets the scene before us'. Ricoeur calls it as the "proper" function, and says "Thus, the same metaphor can carry both the logical moment of proportionality and the sensible moment of figurativity." Quoting from Aristotle, "Liveliness is got by using the proportional type of metaphor and by being graphic -literally: making your hearers see things...For this I mean using expressions that represent things as in a state of

activity” (Aristotle, 2001, 2004) Ricoeur draws from this that “Showing inanimate things as animate is indeed not relating them to something invisible, but showing these things themselves *as if* in an act...Liveliness of the speech serves to the purpose...; persuasion of one’s hearers. This purpose remains the distinguishing character of rhetoric.” (Ricoeur, 1991)

Ricoeur then, leaving rhetoric aside and delving into poetry, explains that, when dealing with the issues about use of metaphor in poetry, *mimesis* is a key point to understand. Resulting mostly from translations it could be generally understand as just ‘imitation’, but a deeper understanding is needed here. Ricoeur’s outcome of Aristotle on *mimesis* can be summarized in two points (Ricoeur, 1991):

The ‘structure’ of plot is what constitutes *mimesis*. This is a strange type of imitation, which composes and constructs the very thing it imitates. In this manner a tension is revealed at the very heart of *mimesis*, between the submission to reality –to human action- and the creative action which is poetry as such. If *mimesis* involves an initial reference to reality, this reference signifies nothing other than the very rule of nature over all production. But the creative dimension is inseparable from this referential movement, then *mimesis* is *poiesis* and *poiesis* is *mimesis*.

Mimesis preserves and represents human features not in essential form, but in a way that makes it greater and nobler.

There is thus a double tension proper to *mimesis*: on the one hand, the imitation is at once a portrayal of human reality and an original creation, on the other, it is faithful to things as they are, and it depicts them as higher and as greater than they are.

Ricoeur claims that, with the foundations based on *mimesis*, metaphor stops being arbitrary and trivial; and subordination of *lexis* to *muthos* already puts metaphor at the service of ‘saying’ of ‘poetizing’ which takes place no longer at the level of the word but at the level of the poem as a whole. Then the subordination of *muthos* to *mimesis* gives the stylistic process a global aim, comparable to rhetoric’s intention to persuade. Considered formally metaphor represents nothing but a difference in meaning. Related to the imitation of our actions at their best, it takes part in the double tension that characterizes this imitation: submission to reality *and* invention, unaltering representation *and* ennobling elevation. This double tension constitutes the referential function of metaphor in poetry.

It should not be missed that mimesis is *mimesis phuseos*; imitation of nature, but this says Ricoeur should not be taken in a restricting sense. Here we quote Ricoeur once again, in order to show the line to his conclusion; a Heideggerian 'being-in-the-world', as a result of his reading of Poetics, and following arguments through metaphor, mimesis, poetizing and metaphysics:

...no Poetics can truly ever have done either with mimesis or with *phusis* (nature)...the concept of mimesis serves as an index of the discourse situation; it reminds us that no discourse ever suspends our belonging to a world. All mimesis, even creative – nay especially creative- mimesis, takes place within the horizons of a being-in-the-world which it makes present to the precise extent that the mimesis raises it to the level of *muthos*. The truth of imagination, poetry's power to make contact with being as such – this is what I personally see in Aristotle's mimesis (Ricoeur, 1991).

He then follows with other quality of mimesis which is connecting reference to the act:

But mimesis does not signify only that all discourse is of the world; it does not embody just the *referential* function of poetic discourse. Being *mimesis phuseos*, it connects this referential function to the revelation the Real as Act. This is the function of the concept of *phuseos*, to serve as an index for that dimension of reality that does not receive due account in the simple description of that-thing-over-there. To present man 'as acting' and all things 'as in act' – such could well be the ontological function of metaphorical discourse, in which every dormant potentiality of existence appears as blossoming forth, every latent capacity for action as actualized. (Ricoeur, 1991)

Ricoeur's much less referred paper "The Metaphorical Process as Cognition, Imagination, and Feeling" actually gives a very concise account of his theory on underlying systems of metaphor, from schematization to split reference and suspension of meaning. (Ricoeur, 1979) He focuses on the moment when the absence of meaning occurs (*epoché*). For him 'imagination' does not merely *schematize* by focusing on the similarities, nor does it merely *picture* the sense. Rather, it contributes concretely to the *epoché* of ordinary reference and to the *projection* of new possibilities of describing the word. "Absence" proper to the power of suspending, coalesces and fuses with the *positive insight* into the potentialities of our being in the world which our everyday transactions with manipulatable objects tend to conceal. Regarding 'feelings' Ricoeur says that feeling as well as imagination are

genuine components in the process described in an interaction theory of metaphor. For him feelings are not emotions but *poetic feelings*, and they enjoy a specific kinship with language. They contribute to the split reference of poetic discourse, which he then says they make it possible to justify Heidegger's analytic of the Dasein.

After seeing Ricoeur's conclusion and him getting closer to some points in Heidegger's phenomenological view, it seems necessary to turn to Heidegger once more, to see if he himself had commented on metaphor differently.

4.2 Heidegger and Metaphor

Heidegger's position towards metaphor looks a bit peculiar at first, because he made only very brief statements about metaphor and metaphysics, but used metaphors extensively in his texts, especially in his second period. This has caused some interest, and different interpretations arose around his way of looking at metaphor.

In his short remarks on metaphor, most strikingly, Heidegger expresses that metaphorical exist only within the metaphysical. If metaphor is so closely linked with metaphysics, a thinker with his main interest basically on overcoming metaphysics will have to condemn metaphor. The examination of Heidegger's views on metaphor, therefore, is not going to be easy, by the fact that metaphor and metaphysics are viewed so close, and perceived as being one and the same target in a struggle for the task in overcoming. On the contrary, it is well known, that there are complications with the Heideggerean notion of *overcoming*. (Stellardi, 2000) In metaphor, according to the traditional description, we move -by means of an analogy- from something known to something less known or even unknown. Metaphor is therefore aimed at presenting, analogically, a nonlinguistic reality, or at providing an approximate, immediate and lively representation of a truth or an idea that cannot be logically or conceptually expressed in the given context. This movement pertaining to metaphor is similar to the transfer from sensible (*aistheton*) to intelligible (*noethon*) (Heidegger, 1982) which constitutes, according to Heidegger, the central movement of the metaphysical machine; and, in fact, it is the same movement.

Heidegger sees metaphor either as a means for using language in order to overcome it with the intention of reaching the intelligible and the unspeakable that lies beyond

language, or as an instrument for the establishment of the total interdependence that permits the exploitation of Being. For him, however, the true and essential relationship between language and Being takes place on a completely different level. *Language is the path*. The inexpressible does not lie elsewhere. *Unspeakable* is not mystico-romantic, but the essential reserve of language. Language speaks, and when it speaks according to its own essence it does not speak by way of metaphors, but by way of “nominations”, of showing/hiding indications. (Stellardi, 2000)

Ricoeur believes that, metaphor, understood in its real essence can have a place in our language when dealing with issues on ‘Being’, and claims that, the expression “metaphorical exist only within the metaphysical” suggests that the trans-gression of meta-phor and that of meta-physics are but one the same transfer. “Several things are implied here: first, that the ontology implicit in the rhetorical tradition is that of Western ‘metaphysics’ of the Platonic or neo-Platonic type, where the soul is transported from the visible world to the invisible world. Second, that the metaphorical means transfer from the proper sense to the figurative sense. Finally, that both transfers constitute one and the same transference” (Ricoeur, 1991). Therefore, Ricoeur thinks that what Heidegger does when he interprets poets as philosophers is infinitely more important than what he says polemically, not against metaphor, but against a manner of casting metaphors as particular philosophical statements.

Stellardi supports the point by saying “The ordinary movement of metaphor, with its hopping from image to image, is structurally opposed to the coming of that which wants to be thought. Here metaphor discloses itself as an agent and instrument of representation: Heidegger’s rejection of “images” is therefore strictly dependent on his suspicion with regards to representational thinking-first and foremost as an instrument of the metaphysical/technical epoch. Heidegger’s repression of metaphor does not, therefore, stem from a necessity to safeguard concept, as is traditionally the case. Quite on the contrary, it derives from perception of an essential *complicity* between metaphor and concept. For Heidegger, it is therefore imperative to abandon both metaphor and concept, representation and abstraction, since both belong to the enslaving movement of *logos* and *techné*, and both are responsible for blocking the possibility of the “other movement”. Again following Ricoeur, Stellardi claims that Heidegger’s text is filled with a particular type of metaphor which is the “living” metaphor, and it is principally different from the one Heidegger criticizes.

There are opposing views to Ricoeur, Stellardi and others who are basically saying that there are “good and bad” metaphors and Heidegger suggests us to separate them. An opposition comes from Kockelmans (Kockelmans, 1992); to see the reasons for him being in opposition, let us continue with the discussions on the issue of transference in Kockelmans this time, which we started with referring to Ricoeur above. Perhaps we could look at Heidegger’s own comment that “thinking builds upon the house of Being”; which he then adds to explain that ‘The talk about the house of Being is no transference [übertragung, metaphora] of the image [Bild] “house” to being. But one day we shall by thinking the coming-to-presence of Being in a way that is appropriate to its matter, more readily be able to think what “house” and “to dwell” are.’(Heidegger, 1993) The expression ‘the house of Being’ does not function as metaphor here. The common conception of metaphor would transport a familiar predicate (and what is more familiar than a house or home?) to a less familiar subject, one that is unfamiliar, *unheimlich*, and that in this manner, one would like to bring closer and understand better. (Kockelmans,1992)

Ricoeur’s comment here would be “...In order to interpret these single-word metaphors, our objector also introduces the twofold distinction of the proper and the figurative, the visible and the invisible. Finally, he asserts the equivalence (*namlich*) of these two pairs of terms. So the metaphorical becomes ‘merely’ metaphorical; at the same time the objection becomes a restriction (*darf*). It is therefore really the objector who comes under the aegis of Platonism, which then suffers Heidegger’s wholehearted denunciation.” (Ricoeur, 1991)

Kockelmans however, also referring to Derrida, says that “There is no question here of a metaphor, nor is there question of an inversion. And this is so first of all because the claim made by Heidegger is not a regular statement which tries to posit something about some ontic thing. Secondly, this is so because the claim deals with language as the *element* of what is metaphorical. Thirdly, the claim is about Being itself which is not a thing and which is to be thought here according to the ontological difference which makes metaphoricity precisely possible. Then there is no term here at all that could be said to be used in a proper, usual, or literal sense. This way of speaking by Heidegger is thus neither literal nor metaphorical.” (Kockelmans, 1992)

Kockelmans gives another example, following Derrida again, on Heidegger's use of 'Riss'. Heidegger takes the word as both in the sense of that which tears (fission) as well as in the sense of the fissure (rift) that the fission opens up, and uses to describe the relation between thinking and poetizing. The Riss is described here as the fission that rips open thinking and poetizing and assigns them to be near one another. One of the first texts that he uses Riss as one of his key points is 'The Origin of the Work of Art' where the term characterizes the strife between world and earth. The fission draws those which turn against one another, into the source of their unity, which flows from their common ground. At first sight, Heidegger's way of speaking is thoroughly metaphoric, but Heidegger continues to maintain that, "the language tries to respond Being cannot be metaphorical, because it is no longer metaphysical". And a completely new form of thinking can only corresponds to issues related to Being, which Heidegger calls: *Erörterung*; a search for the place (Ort, topos). This search deliberately seeks the proximity of the poet and, as we have seen already, it is often used in the form of a thinking elucidation of some carefully chosen poems. The main issue at stake is Heidegger's mistrust of ordinary language, in which genuine sayings (Worte) become just words (Wörter). In actual sense, it seems that *Erörterung* cannot be completely separated from some form of metaphORIZATION. The way that Heidegger's use of Ereignis runs via the expression: 'Es gibt...' It is impossible to grasp Being itself, as long as one understands this 'Es gibt...', i.e. 'There is...'. Heidegger calls Ereignis as nothing but that this mysterious giving that makes us perceive Being as a gift. We also find a fascination with center and light in Heidegger's concern with Ereignis. It is not a single event, it means pure lighting emergence and the original clearing of the truth. Here, Kockelmans focuses on what was missed by Greish (1973) and tries to explain why Ereignis cannot be regarded as metaphoric. First, an examination must have started with Heidegger's new conception of language which reverses the 'domination' of man over language and no longer treats language as an instrument that man just uses. In the new language the stress must be on showing (*Ziege*) not on demonstration (*Ausweisung*). Secondly, the relationship between poetizing and thinking carefully needs an examination, showing that the poetic function cannot possibly consist in the projection of the unreal.

To cut it short Kockelmans, summarizes that “At any rate, it seems to me that one should limit the entire discussion about metaphor to Heidegger’s concern with the meaning and truth of Being...Heidegger’s opinion is that the ‘common’ conception of language applies to discourse about beings; so does the ‘common’ conception of word, analogy and metaphor...In one of the central essays in.. On the Way to Language...Heidegger writes that for him the essence of language is the language of Being. The word ‘of’ has here the meaning of a subjective and objective genitive. In other words, the issue here is about the language by and about Being. In this language the thinking poetizing of Being becomes articulated (ontological difference).” (Kockelmans, 1992)

Thinking of Being is the original way of poetizing. Language first comes to word [language], i.e. into its essence, in thinking. Thinking says what the truth of Being dictates: it is the original *dictare*. Thinking is primordial poetizing, prior to all poetry, but also prior to the all poetics of art, since art shapes its work within the domain of language...The poetizing mode of Being of thinking preserves the sway of truth of Being. (Heidegger, 1975)

For Kockelmans again as his summarizing comments, “It is in and by the say of Being’s address and the response to this saying by thinkers and poets that beings begins to be, come to be what they properly are. This happening, thus, is what Heidegger calls *das Ereignis*, the appropriating event...What this appropriation, which comes about through the saying of the language of Being, is, cannot be explained by comparing it with the activity of a cause; neither can it be described as some occurrence. In the manifestation of the saying it can be experienced only as that which grants. Metaphor has its place within a given world; it cannot yet have a meaningful place and function where world and things for the first time come-to-presence. Metaphor has its place in ontic discourse, not in discourse that focuses on the condition of ontological condition of all ontic discourse. The discourse of Being is obviously metaphorical, if one looks at it from the perspective of metaphysics, i.e. from the perspective of ‘closed’ epoch of Being’s history. But if one looks at it from the perspective of Being itself, of the thinking and speaking *of* Being as language (logos), it is not metaphorical and cannot be so, simply because it is not concerned with beings, things, events, or even the Being of beings.”

4.2 Architectural Metaphors

4.2.1 Architectural Metaphors In Philosophy

Architecture and philosophy, considered in relation to one another, have some unique ways of interacting, one of which is the use of architectural metaphors by philosophers either to clarify their systems through architectonic schemas or write on certain building types for dwelling on their association with daily life, social scene, or unconscious activities of thinking, either with the established patterns or memories attached to these buildings. Architectural metaphors have played a central role in Western philosophy since Plato's use of the image of the cave, As Claudia Brodsky Lacour (1996) demonstrates construction functions as a fundamental trope in Descartes's conception of philosophy, with the philosopher likened to an engineer or an architect (Rampley, 2000)

A clear example for the architectonic schema type approach to architecture is definitely Kant's edifice: without the actual function or type of a building, Kant describes his systematic thinking model as an edifice, which rests on firm foundations of geometric nature. As it was explained in detail in the Kant section of this thesis, it is not necessary to reexplain once more how he does this, but the point here is the use of a metaphor from architecture to prove the certain systematicity through architectonics. The type of architecture that Kant describes is thought out with the geometric rules from the start before anything else than can be the dominant problematic for a building. He talks about function later, in Critique of Judgement, as an issue that definitely restricts the quality of beauty in a building as it will clash with the disinterested viewing of an art work.

Kant's building rests on strong foundations based on the geometric formatting of the space perception. His building therefore, is not only represented through geometric descriptions but is thought out with geometry from the very start of perception of the existing situation. He uses the firmness of the building as the metaphor, but places steps of his synthetic process in the enclosed as well as self-contained parts of his building. These self-contained stages actually carry on their duty in spontaneity with other sub-units which then conduct the processed results of their own to the next level or to sub-unit or to a room or to a flat in a four-floor building. Each cell works

according to the described systematic and this building produces rational thoughts. Like a machine it works faultlessly. Actually his edifice can easily be pronounced as a machine, as it has a production purpose it cannot be regarded as beautiful either; a building which only works but unintentionally, spontaneously at the basement level and united at every cell; as the unity of his synthesis is an essential aspect of it. We are processing thoughts as if we are moving along in a building in a well determined order of cells, for the results to be reliably rational.

Any building has to have a form as only the sublime cases are possibly formless and affect us through the evidences of genius whom can transfer God's attributions. The issues related to architecture's having a form is crucial here to see other philosopher's relation to architecture and architectural metaphors in their discourse. The edifice is given as already constructed that we move through it but we are not engaged in a building activity, which is more important for Heidegger as discussed before in this dissertation in relevant sections. In Kant's way, the brain equals to an edifice and therefore we are all like buildings with standing firm on the ground who do not have to rely on God as the source of our thinking. The system is a priorily drawn and implied upon us to direct the stages of our thought. As any well drawn building, before its construction process starts, and naturally its being occupied.

As it is explained clearly in this study that, architectural metaphors take their place in some different ways than having only geometrically described forms in philosophical discourses, uniquely to the author's concern. As is the case for Nietzsche and Bataille, who can be mentioned among many many others (including Foucault, Freud, etc), the buildings considered are not devoid of any values attached to them and are not like machines working in order. Nietzsche's goal is thus what Brodsky Lacour (1996) terms an "architecture for knowing" rather than an architectonics of knowledge. While in rhetorical terms this presents a neat distinction, it is not that clear what an "architecture for knowing" actually refers to, nor is it evident that Nietzsche carried it through consistently in his writing. As Karsten Harries (1996) shows Nietzsche reworks the classical motif of the labyrinth as a metaphor for the problematics of modern culture. He is not the first to do so, for it figures prominently in Baroque culture -and here we may recall Walter Benjamin's view of Baroque culture as the essential precursor of modernity- and in Nietzsche the image of the

labyrinth appears to have the same kind of function as do other architectural metaphors in the work of Kant, Hegel, or Descartes. (Rampley, 2000)

Kofman clarifying this situation explains that, to describe the hierarchized systems of concepts to be found in ordinary language and in science – the ‘well-made’ language above all- Nietzsche uses architectural metaphors, and in doing so he seemingly follows tradition. But Nietzsche’s originality lies in his accumulating metaphors and substituting them for each other, attaching a totally new figure to a stereotyped image, thus provoking a reevaluation of traditional metaphors at the same time as ridiculing them. (Kofman, 1993) Nietzsche’s metaphorical choices varies from the architecture of beehive to that of dungeon, via the Egyptian pyramid to Roman columbarium, the tower of Babel, the stronghold, as well as the spider’s web, a simple assemblage of beams and scaffolding. A genealogical reading reveals the symptoms of health or sickness of their constructors.

For Bataille issues are more relevant to the formless side of buildings; which include the metaphors that are attached to certain buildings regardless of pure geometric configurations of them. These buildings are definitely not in an analytically described mathematical order, but part of our understanding of architecture with attached values of our lives. The word “architecture” is discussed with the metaphors attached to architecture’s “jobs”, strikingly clear and urgent than the proper meaning of architecture. Architecture refers to whatever there is in an edifice that cannot be reduced to building, whatever allows a construction to escape from purely utilitarian concerns, whatever is aesthetic about it (Hollier, 1992). As it is mentioned in her book “Against Architecture” Hollier claims that architecture, before any other qualifications, is identical to the space of representation; it always represents something other than itself from the moment that it becomes distinguished from mere building. This irreducibly metaphorical situation of architecture, as architecture defined as the representation of something else, extends to language where architectural metaphors are very common. For Bataille, the cliché nature and anonymity of such metaphors are the indication that they are not innocent but serve for ideological tasks as instruments, to describe a system with the vocabulary of architecture uncovers a unitary vocation. As Hollier agrees anything that resembles play, exteriority, or alterity is repressed. Since the system is monadic it has only one voice, a bit of an internal monologue (Hollier, 1992).

The edifice of metaphysics like the one of Kant, removes all the insecure layers that undermine its structure. In these terms, deconstructive discourse dismantles and demolishes structures; it is not itself architectural, rather it is displacement of traditional thinking about architecture. As Derrida (1986) would say “Now the concept of deconstruction itself resembles an architectural metaphor. It is often said to have a negative attitude. Something has been constructed, a philosophical system, a tradition,.. and then comes a de-structor.. analyses the structure and dissolves it. however this is not the essence of deconstruction, it is not simply the technique of an architect, who knows how to deconstruct when it is constructed, but a probing which touches upon the technique itself, upon the authority of the architectural metaphor to construct its own architectural rhetoric.”

Derrida summarizes some issues on metaphor in *White Mythology* (1982b), by saying that metaphor is determined by philosophy as the provisional loss of meaning, but also within the horizon of literal meaning. Metaphor is dangerous and foreign as it concerns *intuition* (vision or contact), *concept* (grasping or proper presence of the signified), and *consciousness* (proximity or self presence); but it is in complicity with what it endangers, it is a re-turn guided by the fiction of resemblance. “This supplement of a code which traverses its own field, endlessly displaces its closure, breaks its line, opens its circle, and no ontology will have been able to reduce it.” (Derrida, 1982b)

4.2.2 Metaphors In Architecture

Metaphor in Structuralist Approach: Architecture’s relationship with metaphors show different strength from time to time. It can be remembered that it went to a peak in the Post-Modernist approaches especially after Robert Venturi’s (2001) famous book “*Learning From Las Vegas*” after 1980s. In “*The Language of Post-Modern Architecture*” Jencks (1987) focuses on the modes of architectural communication, and claims that there are various analogies architecture shares with language and if the terms are used “loosely”, we can speak of architectural ‘words’, ‘phrases’, ‘syntax’ and ‘semantics’. Then he starts dealing with metaphor as the code usually disregarded by modern architecture. For him the relationship is not at all complicated type, as “People invariably see one building in terms of another, or in terms of a similar object; in short as a metaphor” (Jencks, 1987) He insists that the more unfamiliar a modern building is the more people will compare it metaphorically to

what they know, and continues with explaining “This matching of one experience to another is a property of all thought, particularly that which is creative.”

His example of the use of pre-cast concrete grills, which started in late 1950s, seems an accurate one for his point. When they are first used on buildings they were seen as ‘cheesegraters’ (see Fig. 4.1), ‘beehives’, ‘chain-link fences’; while then years later when they became the norm for certain type of building, they were seen in functional terms: ‘this looks like parking garage’. Therefore Jencks sees this transformation as “from metaphor to cliché, from neologism through constant usage to architectural sign”.



Figure 4.1: An example of cheesegrater façade-
London, multistorey carpark, adapted from Url-6.



Figure 4.2: Kisho Kurokawa, Nagakin Capsule Building¹,
Tokyo, 1972, adapted from Url-7

¹ A metaphor of stacking rooms like bricks or sugar cubes for Jencks. “They aren’t washing machines, they’re bird cages... I’ve built these bird nests for businessmen who visit Tokyo, for bachelors who fly in every so often with their birds.” By Kurokawa, in Jencks, 1987.

For the code restrictions based on learning and culture there are multiple choices for readings, and there may be multiple codes some of which may be in conflict, as it well-known in the case of ‘duck-rabbit’ figure.

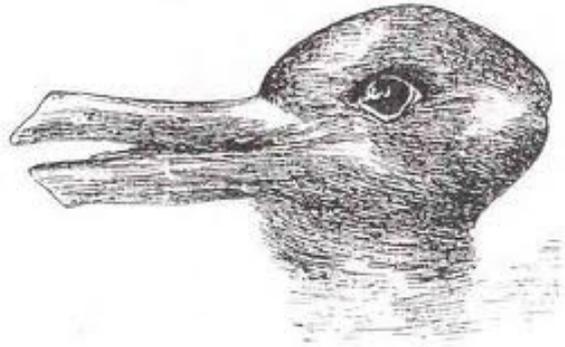


Figure 4.3: The duck-rabbit illusion¹, adapted from Jencks (1987).

Metaphor understood in this manner, as direct representation of one thing and as literal as possible, Le Corbusier’s chapel of Ronchamp has been compared to all sorts of things.

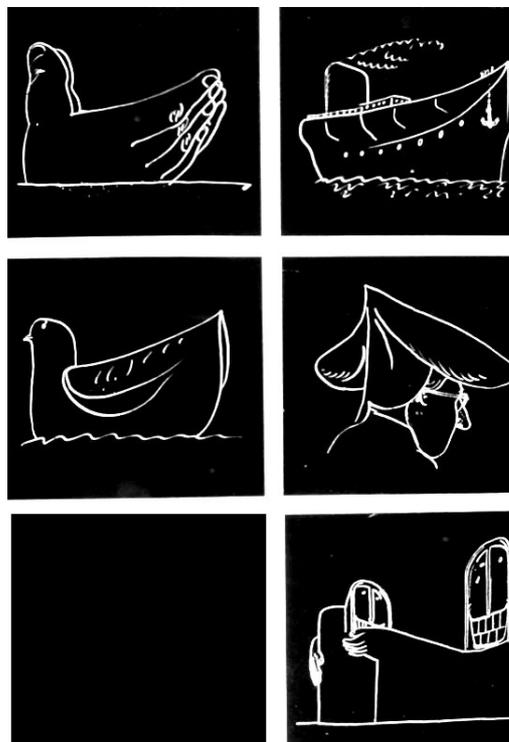


Figure 4.4: Metaphors of Ronchamp, by Stockhen, adapted from Jencks (1987).

¹ It can be read as a duck from left to right and as a rabbit from right to left, but can only be read as one thing at once depending on the chosen code.

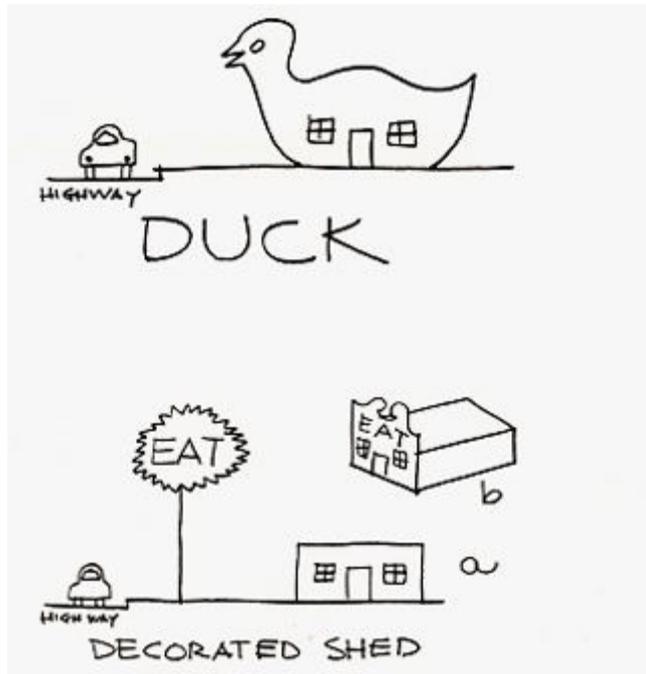


Figure 4.5: Venturi's Decorated shed /Duck classification, adapted from Url-8.

"Duck" and "Decorated Shed" represent the two main ways of embodying iconography in buildings. They define the idea and an exercise in image over process or form. The part they tell us that is the final 10% of a project but the part we all see and remember. They talk about the idea of the image being either similar to or relating to the form or a contradiction to the form, structure, and program of the building of which they are part. (Wildman, 2001) The exercise will be divided into these manifestations:

1. Where the architectural systems of space, structure, and program are submerged and distorted by an overall symbolic form. This kind of building becoming sculpture we call the duck in honour of the duck shaped drive-in, "The Long Island Duckling," illustrated in God's Own Junkyard by Peter Blake.
2. Where systems of space and structure are directly at the service of program, and ornament is applied independently of them. This we call the decorated shed. (Wildman, 2001)

The work of Venturi, Rauch and Scott Brown adopted the latter strategy, producing formally simple "decorated sheds" with rich and complex ornamental touches, as is the case for well-known Vanna Ventury house (see Figure 4.6).



Figure 4.6: Vanna Ventury House, adapted from Url-9.

Metaphor in Post-Structural Critiques: So far it was tried to be shown that the understanding of metaphor in architecture until mid 1980s was so much intertwined with the approaches of symbolism and iconicity. It is possible to add the rich subtitles under the discussion on “simulacrum” at this level. *Simulacrum* which means “likeness, similarity” in Latin; and Fredric Jameson (1984) offers photorealism as an example of artistic simulacrum where a painting is sometimes created by copying a photograph that is itself a copy of the real. Two steps of reproduction for Plato are faithful and intentionally distorted (simulacrum), and for Baudrillard (1994) there are four types:

- (1) basic reflection of reality,
- (2) perversion of reality,
- (3) pretence of reality (where there is no model),
- (4) simulacrum, which “bears no relation to any reality whatsoever.”

In Baudrillard’s concept, like Nietzsche’s, simulacra are perceived as negative, but for Gilles Deleuze, seeing simulacra as the avenue by which accepted ideals or “privileged position” could be “challenged and overturned.” (Massumi, 1987) Deleuze defines simulacra as “those systems in which different relates to different by means of difference itself. What is essential is that we find in these systems no *prior identity*, no *internal resemblance*.” (Deleuze, 1994)

Simulacra often seen in speculative fiction, artificial or supernaturally or scientifically created artificial life forms, and in Disneyland type entertainment options. The term 'simulacrum' to denote the formation of a sign or iconographic image and it is most relevant to architecture as simulated environments.

Simulated reality is seen as the proposition that reality could be simulated including computer simulations to a degree indistinguishable from "true" reality. This is quite different from the current, technologically achievable concept of virtual reality, as virtual reality is easily distinguished from the experience of actuality. Virtual architecture theory is a topic on its own, to be discussed as a small part, only relating to representation problem, in Conclusion.

The approaches mentioned so far, mostly with the most notoriously known images in the above section, were mainly show a tendency based on the underlying understanding of either symbolism or an understanding staying within the limits of representation.

After a search by architects for a deeper understanding and a critical approach in 1990s, this type of one to one representations seen as a metaphorical approach –but symbolism based-, started to leave its place for a more conceptual effort, by reading philosophers such as Derrida, and trying to understand the double nature of metaphor as revealing-concealing type. This sort of discourse, starting from an architectural figure but actually pointing at some fundamental questions in philosophy, in a way can make the traditional understanding of any architectural issue more traditional. Because the architecture becomes harder to be imagined without the issues stressed in the discourse. The discourse itself can be threatening for architecture while trying to escape from the architectural threat. Even strengthening the issues considered in the discourse can block the way to the other issues, which is not necessarily related to any sort of philosophical discourse.

How the architectural figure is treated by philosophy is not through the designing of it, but through what architectural metaphors take their place in philosophical thinking. As for some architects trying to break the traditional structures established in architectural design, and deconstructing basic concepts of it which are so familiar that architects do not even notice their existence let alone question them. The architecture of deconstruction especially starting from 1990s bothered about these

basic concepts. Including Hadid, Eisenman, Woods and many others started questioning established architectural concepts with their design. The tendency can be understood with its being critical in nature.

Eisenman seems to care about “three fictions” of architecture which persisted since the fifteenth century; for him they are representation, reason and history (Eisenman, 1984). And considering their purpose, representation was to embody the idea of meaning, reason was to codify the idea of truth, history was to recover the timeless from the idea of change. He calls the continuing mode of their persistence “the classical” which is timeless, meaningful and true. These three fictions can actually be seen as simulations in the sense of Baudrillard’s “Simulacra and Simulation” (Baudrillard, 1994)

Eisenman focuses on the congruence of language and representation before the Renaissance, in other words, the way language produced meaning could be represented within language. By the late 18th century, truth was no longer thought to reside in representation but was believed to exist outside it; in the process of history. For Eisenman, this shift can be seen in the changing status of the orders: until the 17th century they were thought to be paradigmatic and timeless; afterwards the possibility of timelessness depended on a necessary historicity. “This shift as just been suggested, occurred because language had ceased to intersect with representation—that is because it was not *meaning* but a *message* that was displayed on the object.” (Eisenman, 1984)

Eisenman puts an emphasis on loss of distinction between representation and reality, on the fact that sign begins to replicate or rather simulate once the represented reality has lost its own system of value. It can be obvious for eighteenth century with the sense of rational, that if architecture looked rational, i.e. represented rationality, it was believed to represent truth. For Eisenman, architecture never actually embodied reason, but stated the desire to do so; instead it presented an aesthetic of the experience of reason, and truth is a never ending series of figures, metaphors and metonyms. “In a cognitive environment in which reason has been revealed to depend on a belief in knowledge, therefore to be irreducibly metaphoric,...architectural restatement, replication, is a nostalgia, for the security of knowing, a belief...Once analysis and reason replaced self-evidence as the means by which the truth was

revealed, the classic or timeless quality of truth ended and the need for verification began.” (Eisenman, 1984)

Lebbeus Woods as one of the particularly good case, has created definitely no brick and mortar edifices, says Richard Armstrong, Henry J. Heinz II director at the Carnegie Museum of Art for Woods’ well known exhibition. Well describing the attitude towards geometry by Deconstructivists, comments for this exhibition says: “Woods's works make fascinating use of angles. They are often asymmetrical and can sometimes look as if they were arbitrarily placed. Some of his works blur the lines between art and architecture. His designs on paper are works of art in their own right.” (Smith, 2004) As it will be seen in the figures below aluminum tubing fills an entire room in an intricate pattern, weaving in and out of itself. Woods says this piece is a *metaphor* for the unknown. (See “The Tangle” below)



Figure 4.7 : The Tangle, by Lebbeus Woods,
adapted from *Domus* (19 Jan 2005).

Here it is important to notice that *concept* and *metaphor* are generally used by architects to describe the same thing; to describe the generic idea behind their design decisions. After reading Kant though, and becoming more accustomed with how concept is treated in philosophy, and how metaphor is conceived it seems a bit of a dichotomy to use both concept and metaphor for the same purpose.

Another aspect of Woods is his interest in cities, so to be able demonstrate a critical approach, which is completely away from being traditional.

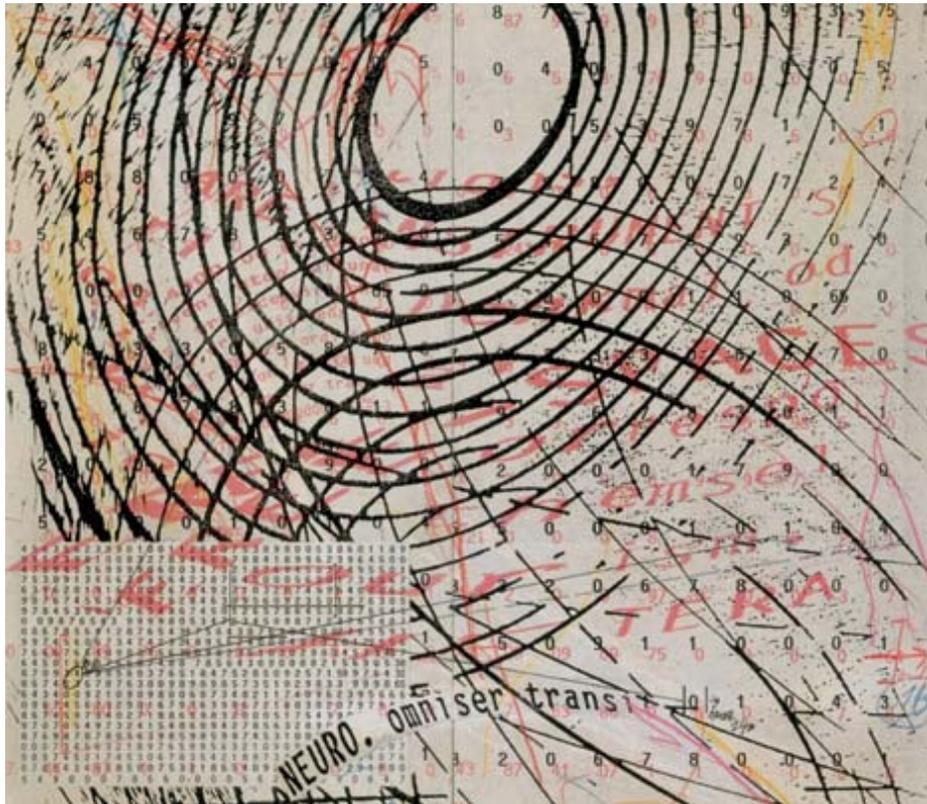


Figure 4.8 : Communications heterarchy, conceptual sketch of the Berlin Free Zone Project, adapted from *Domus* (19 Jan 2005).

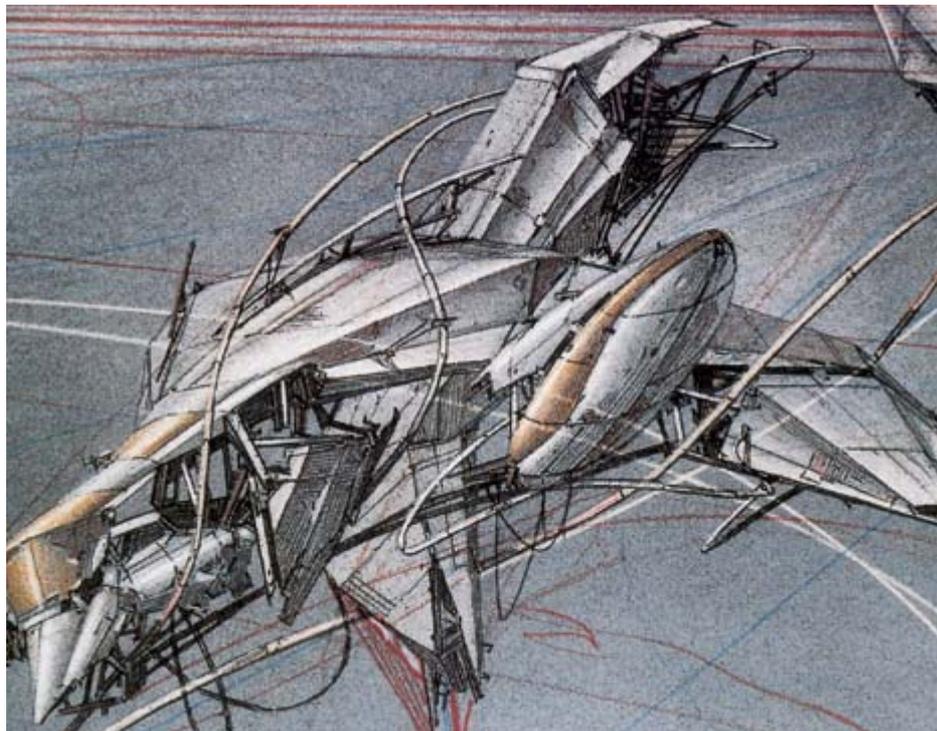


Figure 4.9: Berlin Free Zone, Woods 1990-91, adapted from *Domus* (19 Jan 2005).

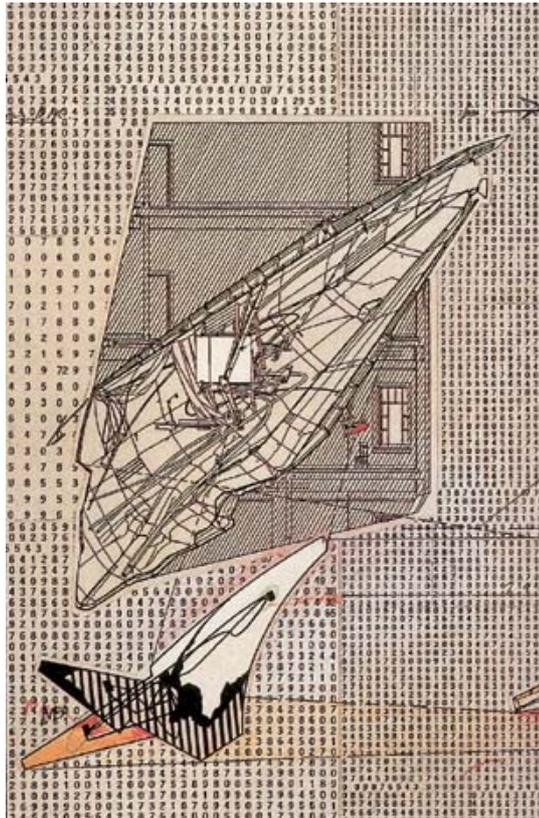


Figure 4.10 : Berlin Free Zone, Woods, 1990-91, adapted from *Domus* (19 Jan 2005).



Figure 4.11: Pencil drawings of Aerial Paris (1989), adapted from *Domus* (19 Jan 2005).

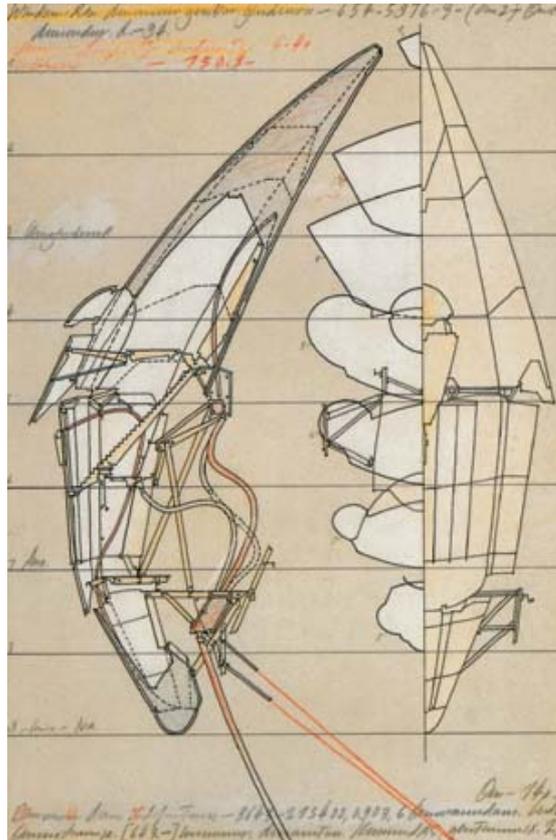


Figure 4.12: Pencil drawings of Aerial Paris (1989), adapted from *Domus* (19Jan 2005).

The following text is an amazing excerpt from Woods’ introduction about his project Underground Berlin that creates a metaphorical and romanticized city out of the situation of Berlin in the 80’s:

A way of living is in this way formed. The builders of the city have sought political independence by going beneath the earth, under the Wall, subverting the designs of occupying political rivals, and have found something unexpected: a new world, a world of seismic wind and electromagnetic flux, a world of constant and not unpleasant temperatures, but also of continuous change. Their structures, built to connect inversely with the world above, are instruments of this change, measuring both the life of the inanimate planet and the corresponding changes of those living within.(Woods, 1992)

Another important name with his work on cities is Rem Koolhaas for sure; remembering “Delirious New York” and “Generic City” in his S,M,L,XL. Delirious New York is a polemical investigation of Manhattan: it documents the symbiotic relationship between its mutant metropolitan culture and the unique architecture to which it gave rise. Koolhaas’ use of the term metaphor. “ As in the example of Radio City Music Hall, planning in Manhattan consists of the imposition on the explosive substance of the Metropolis of the *metaphoric* models –at once primitive and

efficient-that replace literal organization-impossible in any case with a form of conceptual control...Together, such moments from a matrix of frivolity, a system of poetic formulas that replaces traditional quantifiable planning in favor of *metaphoric* planning. Movement in the Metropolis becomes ideological navigation between the conflicting claims and promises of “islands” of metaphoric archipelago.” (Koolhaas, 1994)



Figure 4.13 : Manhattan Islands. Each block an island in which architectural folklore could be experimented, adapted from Koolhaas (1994).

Rem Koolhaas went on demonstrating the many sides of his surfer metaphor both to describe the architecture of Manhattan and to refer to its intellectual positioning as regarding the production of architecture, and continued with criticizing the metropolis of Lewis Mumford and Leon Krier, in *Generic City*. (Koolhaas, 2002)

Usually known with her large scale building complexes in city Hadid is definitely worth to consider with her unique approach. Searching for the ideas for her Guangzhou Opera House, it is possible come across a dichotomy of terms used, as it was for Woods mentioned above. In her web site Hadid explains her generic ideas for the opera project using the word *concept*. (Url-10). “Like pebbles in a stream smoothed by erosion, the Guangzhou Opera House sits in perfect harmony with its riverside location. The design evolved from the concepts of a natural landscape and the fascinating interplay between architecture and nature; engaging with the principles of erosion, geology and topography. The Guangzhou Opera House design has been particularly influenced by river valleys – and the way in which they are transformed by erosion.”

She seems to go into material details still under *concept* section, saying that fold lines in this landscape are transformed into interior and exterior canyons for circulation, lobbies, cafes etc allowing light to penetrate deep into the building, she then continues “Smooth transitions between disparate elements and different levels continue this landscape *analogy*. Custom moulded glass-fibre reinforced gypsum (GFRC) units have been used for the interior of the auditorium to continue the architectural language of fluidity and seamlessness.”(Url-10). So it seems material choice and precise workmanship could suddenly find a place in *concept* section.

Being a re-interpretation of natural cavities of stone, rock and earth the interior images depicts really spectacular spaces, but such a huge scale building would not neglect the urban issues. Then comes the traditional values as her unique explorations: “Zaha Hadid Architects’ unique exploration of contextual urban relationships, combining the cultural traditions that have shaped Guangzhou’s history.” (Url-10).

Nevertheless, the ones visiting the building, and even her project architect are happy about using the word *metaphor* for the same purpose instead of *concept* by Hadid. “We liked erosion and stones. It worked well next to the Pearl River. The *metaphor* is two pebbles picked from the bed of the river and placed on the river bank” says Simon Yu (Url-11), project architect.



Figure 4.14: Guangzhou Opera, adapted from Url-11.



Figure 4.15: Guangzhou Opera, adapted from Url-11.



Figure 4.16: Guangzhou Opera, adapted from Url-11.



Figure 4.17: Guangzhou Opera, adapted from Url-11.

So the trend seem to be not so much revealing but cocerns on the nature of human thought and established structural images of architecture with creating some iconic buildings which are well known and discussed by everyone and are liked and admirably sought after looks by other architects. The description of “Iconic” belongs to amore recent period in architecture (2000s) Most of which are called big scale intervals to the cities, with a good deal of cash flow needed to realize them. As they are products of capitalism in most cases it is sometimes possible to criticise them that they are actually attached to the problems of decadence. But in a positve manner it should be necessary to comment on the issue as the iconic contributions to cities to be remembered for a long period of time, addition of new landmarks to city scenes.

5.CONCLUSION

This study tried to show perception, use of metaphor and representation all joined together and highlighted the complexities of these issues and their relations, through architectural and philosophical arguments.

Table 5.1: Kant’s system

Schema, perceptual process, concepts			
Kant’s system -subjectivity			
<u>Intuition</u> (to look at)	<u>Imagination</u>	<u>Understanding</u>	<u>Reason</u>
Space	Archetypes	Concepts	Judgements
Time	schematicism		aesthetics
Geometric formatting			sublime
Schematic thought, space and time, geometric formatting, image, archetype, understanding and its conceptual classification			

Immanuel Kant

For Kant, our knowledge begins with experience but it does not mean that it all arises from experience. He introduces the difference between the ‘Thing-in-itself’ and the ‘thing-as-appears-to-us’. His edifice-like synthetic stages are united by the stage of understanding. Having this synthetical process, subject is related to the outside world only through intuition, which constitutes the first stage. For Kant, subjectivity gains objectivity through geometry which is “a priori” form of intuition. Through the representation of what is “a priori”, “ideal” can have “real” demonstrations.

Considering how production of art work is understood in Kantian aesthetics it is possible to say that free play of productive imagination is also restricted by intuition.

For Kant, when the ‘play of figures’ is concerned, (it is in space and external intuition is involved) “design is important”, and when the ‘play of sensations’ is concerned, (it is in time and internal intuition is therefore involved) “composition is important” (CJ).

His complaints about the regularity of geometric forms and their constraint on the free play of imagination (CJ) are the points what actually make his edifice’s foundations shaky. Considering his views on the ‘sublime’, it becomes obvious that capacity of conceiving non-spatial and non-temporal forms of thought (sublime), points to the limitations of sensuous representation.

Some reasons to discharge the stress placed upon the building figure in philosophy and aesthetics in their own ways which also have their own limitations. Even Kant himself showed an awareness of thoughts which are “non-spatial” and “non-temporal”. He deliberately tried not integrate them into his system, but they are much likely to have an influence in architectural design.

In art work there is more than what can be visually demonstrated and what metaphor can provide. There is more in designing than representation and having temporary meaning or no meaning at all, but coming from just doing it. A second return to Kant might be necessary to judge the position of aesthetics in relation to production. For Kant, art and nature both have purposiveness without purpose, that means in both art and nature identity and nonidentity exist simultaneously, in unity. Imagination is described in two forms in “The Critique of Judgement”; as reproductive and productive. Only productive imagination can have “free play”. For Rodowick “A judgement of beauty becomes possible, when the harmony of form in the object is intuited as analogous to a harmony in the subject that the imagination would form with respect to the understanding if, paradoxically, the former were left in perfect freedom to confirm itself to the lawfulness of the latter” (Rodowick, 1994). Having a form, the beautiful has to be intuited: to be determined geometrically, we surprisingly see Kant complaining about the regularity of geometric forms and their constraint on the free play of imagination. He claims that geometric forms refer to the concepts of the understanding and make the beauty dependent (Kant, 1952). This can also be connected to the limitlessness of the sublime, he stresses that our imagination is capable of grasping that which is infinite, immeasurable, and indescribable (Kant, 1952).

All these comments can show once again that even Kant himself saw the restricted capacity of intuition, that he described in his first critique, and the flaw of the rules obtained in a synthesis solely relying on this restricted base. This means housing in geometry does not work as it first seems. Productive imagination contains a notion of paradoxical freedom, and it is claimed that this is the case whether it applies to acts of creating or of judging aesthetic objects (Rodowick, 1994). It should not be forgotten that even this type of imagination is limited by the forms of objects intuited, and related to the lawfulness of understanding; therefore does not give a whole account of genius' creation act.

For Heidegger, trying to ground philosophy in subjectivity is impossible, but his first approach is another subject oriented one, which he describes in "Being and Time". Here he claims "time" as the horizon for understanding of being, and says there can only be temporal understanding of "becoming". Later, his orientation towards subject becomes secondary to his orientation to language, on the basis of language's being already there before anything we can term subjectivity.

To discover something of its framework Heidegger tries to place himself within the structure. He calls this "critical unbuilding". He says, to think about what Being is, we should think about being at home, in a shelter; and this should not be a thinking of means and ends. "Building is closer to the essence of spaces and to the essential origins of 'space' than any geometry and mathematics. Building puts up locales that make space and a site for the fourfold (earth, sky, mortals and divinities)" (Heidegger, 1978a).

The locale has two roles: admitting and installing. "Things such as locales shelter or house men's lives. Things of this sort are housings, though not necessarily dwelling houses in the narrower sense. The making of such things are building...Building and thinking are inescapable for dwelling" (Heidegger, 1978a).

After his turn to language he claims that Being is housed in language. He attributes a special position to poetry, and shows poetry as the measure for architecture. Poetry speaks in images. He thinks only through poetic image something familiar can displace what is actually alien. For him the alienation is an ancient one (Plato - ideas) but was manifested by modernity.

There is great risk at Heidegger's critical unbuilding which is becoming constructive itself. Thinking his solid effect in architecture, it is possible to say that this has actually happened. The risk is there for the poetic images, as well, which he gives the role of disclosing the alienation caused by modernity. Therefore, the nature of metaphor should be examined more carefully.

Metaphor discloses the world within language which is a form of conscious production and has a meaning. Metaphor cannot stay as a metaphor when the meaning becomes subjected to rules and commonly shared. The hope that comes with referring to poetic language is that we might find ways of saying the unsayable being that which cannot be characterised by an objective predicate.

Philosophy depends on verbal/written language, architecture does not. For this reason even the case of metaphor does not really compare to architecture. Unlike metaphor, architectural design does not stop being architectural when it is completed, and when we know "what it is". There might not be a metalanguage to place metaphor in, but there is a 'meta' level to place single buildings in; that is city.

The question here is that whether aesthetics is mainly applying what is produced by philosophical discourse on to art, or trying to get closer to art production in the way how aesthetics produces. Each case will lead to either some sort of imitation or to be considered as an art form on its own. The answer seems a bit closer to the first one: applying philosophical discourse on to art. In respect to what philosophy is trying to do to architectural figure fundamentally placed in it, architecture could perhaps try to do the reverse. That is discharging the stress placed upon the building figure and architectural relations understood traditionally. This does not sound new, but it will require a capacity to forget knowing, to be able to go beyond what is done until today.

This sort of discourse, starting from an architectural figure but actually pointing at some fundamental questions in philosophy, in a way can make the traditional understanding of house or any architectural issue more traditional. Because the house becomes harder to be imagined without the issues stressed in the discourse. The discourse itself can be threatening for architecture while trying to escape from the architectural threat. Even strengthening the issues considered in the discourse can block the way to the other issues, which is not necessarily related to any sort of philosophical discourse.

How the house figure is treated by philosophy is not through the designing of it, but through what house represents in philosophical thinking. So, Bowie's claim for imaginative access to what cannot be represented as itself through metaphor is to some extent valid but not enough. Because it does not refer to the architectural production itself, but just to imagining what "is" can both be what "is not", and what "is like".

For Heidegger the understanding of being can only be temporal, that is "becoming". All speculative metaphors can be regarded as "revealing-concealing" at the same time; which means they are temporal disclosures.

The "revelation" and "concealment" are based on "inside-outside" relations. The notion of "inside-outside" comes from the concept of "inhabitation". In metaphysics, the metaphor "inhabited" is actually the metaphor of inhabitation. The house is constitutionally bound into the metaphysics, and cannot be subordinated as a kind of metaphor. The edifice of the metaphysics is a house. It means that the domestication of the house is done by metaphysics, and house conceals itself by concealing the uncanny, that is alien, outsider. Since the logic of the outside is also defined by the inside, the revelation of both inside and outside will always have something missing in it.

What if there happen to be the case where multiple sides are included and not one side has been left out; neither only inside nor only outside existed, but they could exist in a multiplicity, as Foucault's "heterotopias"? Thinking that heterotopia describe places and spaces that function in non-hegemonic conditions and are spaces of *otherness*, which are neither here nor there, that are simultaneously physical and mental, Foucault asserts that heterotopias exist unlike unreal places of utopias. (Foucault, 1986)

Following Gilles Deleuze's (1994) definitions of "actualization of the virtual" and "realization of the possible" John Rajchman (Rajchman 1998, 2000) established a search for "virtual" house with the virtual house competition which was realized upon the invitation of Nouvel, Eisenman, Ito, Libeskind, Herzog & de Meuron, Zaera-Polo in 1997. Rajchman explains the problem that the virtual house is the one, which, through its plan, space, construction, and intelligence, generates the most new connections, the one so arranged or disposed as to permit the greatest power for

unforeseen relations. Main idea is to search after the virtual as multiple potentials for new connections or unseen relations. (Rajchman, 1998)

The answers by the invited architects to the problem of such a “house” came with vast differences from one another. The focus on virtual in the sense of space-time relations, oscillated from the movement frozen in a casual instant to ever changing characters of space, with Libeskind’s pure *concept*, Eisenman’s skills and experimentation in the *drawing*, Ito’s *sentiment*, Nouvel’s simplicity and modernity in *construction*. (Centola, 2000) It seems the search is to continue because “the virtual looks like nothing that we already know or see”. (Rajchman, 1998)

Even though the multiple existences are in consideration for many contemporary debate, the problems that this dissertation addressed seem to exist for many cases including the education of architecture, graphic communication and basics for design in especially the first year studios. So to sum up what were the main problems dealt with in this study it is necessary to get to the problems related to perception. Starting with the Kant’s schema approach to theories related to perception to sum up it is possible to state that many theories gave priority to “visual” perception. That is by Weber (1995) stated that perceivable things must partly be constrained by properties of form. Kant’s schematic system affected perception theories on the basis of examination between seeing and knowing.

Though memory based or tabula-rasa based theories exist they try to describe the stages between seeing and knowing with some steps, which is possible to be described with schemata. Such terms as sensation, perception, imagery, retention, recall, problem-solving, and thinking, among many others, refer to hypothetical stages or aspects of cognition.

In conclusion it may be convenient to remember Kant’s own point on perception from Critique of Pure Reason; “The genus is representation in general. Under it stands representation with consciousness (perceptio). A perception which relate solely to the subject as a modification of its state, is a sensation (sensatio), an objective perception is a cognition (cognitio).”

Later, cognitivism would be attached to the issues artificial intelligence for many cases, as it can be in Neisser’s. Neisser (1967) provides a definition of cognitive psychology characterizing people as dynamic information-processing systems whose

mental operations might be described in computational terms. He postulates the mind as having a certain conceptual structure, and recognizes high level concepts such as “reasoning”. For him, even linguistic syntactic structure, as the research intention, has reflected a mentality of analysis of the structures.

Because of the use of computational metaphors and terminology, cognitive psychology was able to benefit from greatly flourishing of research in artificial intelligence.

Contrary the traditional scientific methodology which usually inclined to divide the object of study into a set of elements so that these could be analyzed separately, to reduce the complexity of this object, the school of **Gestalt** practiced a series of theoretical and methodological principles that attempted to redefine the approach to psychological research.

The focus of Gestalt was the idea of grouping, in structuring and interpreting a visual field or problem in a certain way. Two directions are involved: getting a whole consistent picture, and seeing what the structure of the whole requires for the parts.

Leaving the schematic structures to another side, the embodiment approach has its rather unique position with Merleau-Ponty. He replied to Kant emphasizing the importance of the “experience” of thinking, in the sense that we presented our thought to ourselves through internal and external speech.

The denomination of objects do not follow upon recognition; it is itself recognition”When I fix my eyes on an object in the half-light and say: ‘It’s a brush’, there is not in my mind the concept of a brush, under which I subsume the object, I am conscious of reaching that object” (Merleau-Ponty, 1994)

For architects, main ways for delivering their design decisions to others for them to receive the idea is “projection” onto a surface (usually on paper). Evans (1995) describes projection as “what connects thinking to imagination, imagination to drawing, drawing to building, and buildings to our eyes is projection, or process that we have chosen to model on projection.” For him the geometry chosen for this task is usually understood as dead. “Geometry is understood to be a constitutive part of architecture, but if it is dead geometry it usually is found more reliable for solid foundations”.

As it was seen during the time, certainly within the period of time this dissertation topic has been under development, approaches to philosophy and architecture have changed. Any effort to establish any solid structure like Kant's architectonic is bound to be rejected at certain stages. But somehow for some disciplines, it keeps its valid position, including architecture; considered from the point of its representation and projection systems established traditionally, without much of a radical change in their orthographic nature existing for centuries.

Considering contemporary efforts architectural propositions are no longer necessarily expressed in the first instance as two-dimensional inscriptions of projected three-dimensional geometrical objects. (Burry, 2010) As they are virtually manipulatable 3D images in the monitor, and thus we see geometrical instances derived from the model. But to "see" the model itself, we must resort to much more abstract representations: scripting, language, graphs of nodes and edges. Therefore the aspects relate to types of seeing for designing are the combined; and definitely includes literal visual apprehension, appreciative judgements of quality, apprehension of spatial gestals.

Regarding these points Anthony Vidler has valuable comments, as Vidler's comments on warped space (Vidler, 2000a) and situationist trials, went on to "blobs" (Lynn, 1999) and "topographies" to criticize their nature (Vidler, 2000b, 2001). "...Its architect calls it a "blob", and compares to a history of similar objects in nature that cultural theory since Georges Bataille has identified with the *informe*. The techniques of its design are drawn not from architecture but from animation software that generate its complex forms..., independent of the architect, to produce multiple iterations of possible combinations." Here Vidler makes his point that these blobs, topographies, etc. though their forward-looking approach and their modes of design and representation in digital technologies, they share the "diagram" aspects of modernist avant-gardes. Even though "diagram" is a topic to be concerned on its own and has different sides to consider, Vidler's method to combine it to architectural drawing is valuable to us, so that a stress on orthographic systems, and even perhaps as far as to "simulacra" is available. As Benjamin (1988) and Evans (1995) pointed out separately that architectural drawings are touched by architects only, being rather different from artist's or sculptor's work, and they do not actually re-produce architecture but they produce it in the first place. These drawings, in technical sense,

include geometrical projections in plans, sections, etc. and demand an expertise of the viewer. As architects work in code, their drawings are potentially hermetic to the outsider, and they depict more or less abstract objects. This separation in reading the blueprints, and the discourse of the graphic image on straight lines, angles, modules, etc., for Lefebvre (1991), is degraded lived space. Vidler explains that the appeal to diagram in recent attempts is both polemical and strategic, because intersection of the diagram and materiality impelled by digitalization upsets the semiotic distinctions drawn by Charles Sanders Peirce as the diagram becomes less and less an icon and more and more a blueprint, or alternatively the icon increasingly takes on the characteristics of an object in the world. "...“blobs” are robbed of their iconic status in favor of their programmatic role in production of forms they image...their easy translation into built form, so as to produce, almost simultaneously, an image as architecture and architecture as image...The long-lived neo-Kantianism that has served for modernism...in these terms has shifted from a diagram that is rendered as an abstraction of an abstraction to one that is diagram of a diagram” (Vidler, 2000b)

In common practice at this stage though, seems difficult for architects for a radical turn with the orthographic representation, even though some other styles are used for expression, for construction purposes and for straight results any form regardless of deconstructivist nature has to be represented in this traditional manner. Remembering Eisenman “line is a vector” sentence, for some vector programs, it may be possible to materialize the idea which is created on a computer screen, but majority of the available 3D modelling media is still based on a certain representation system.

A bit unusual probably but like Darwin’s evolution theory, even though for some cases it is proved to be wrong, there still is no alternative for orthographic systems to be replaced. Or rather can we believe that they completed their evolution to an advanced level and selected by the architects, that the orthographic systems have been one of the very first thing for all the students of architecture are expected to know. Langrish (2004) explains that Darwin has actually not talked about “evolution” but “natural selection”, for the case of design ideas though it is accepted that the term evolution can be appropriate. When Darwinian evolution of ideas are concerned they are called “memetics”. (Dawkins, 1976) “Progress”, “ideas’ having a life of their own”, “law of propulsion”, “internal genetic structures (memes instead of DNA in case of ideas)” are the four arguments in relation to evolution and idea relations.

(Forty, 1986) The main issue here should be the change of ideas, and it seems that the change from orthographic to other systems need more time to occur yet.

For final comments here, a new area can be underlined as the focus of future research: the way how designers use the terms “concepts” and “metaphors”. As shown at the final section of the previous chapter , architects can easily replace the word *metaphor* with *concept* to talk about generic ideas behind early stages of their design decision processes. Concepts, which are the constituents of thoughts, are crucial to such psychological processes as categorization, inference, memory, learning, and decision-making. Though this much is relatively uncontroversial, the nature of concepts are subjected to wide discussions. (See Margolis 2011 for a comprehensive discussion on this issue) Not only what conceptual means but also the content of *conceptual* should also be included in the search. Remembering Table 5.1. and the way how Kant and followers regard *concept* though, and the juxtaposition of several issues in creation of metaphor, make it obvious that, it is not the one to be used instead of *metaphor*.

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CURRICULUM VITAE

Candidate's full name: Ayşe SIKIÇAKAR YÜCEL

Place and date of birth: Bakırköy-30.08.1965

Universities and Colleges attended:

-Faculty of Architecture, ITU,
BSc (with Highest Honor), 1987.

-Arch. Des. Prog. Inst. of Sci.&Tech., ITU,
MSc (with Highest Honor), 1991.

Academic Titles:

Senior Lecturer-LAU – Faculty of Arch. and Eng.	2009-present
Research Assistant– I.T.U. Faculty of Architecture	1989-2009

Publications:

a-Papers delivered in international conferences - printed as full paper and abstract in proceedings

Sıkiçakar Yücel, A., Has Phenomenology Been a Successful Alternative to Paradoxes of Architecture?, *Proceedings of 6th ARCHENG International Symposium on Architecture and Interior Architecture*, 25-26 November 2010, European University of Lefke, pp.9-14.

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b- Other Publications:

Chapter in books : **Sıkıçakar, A.,** “Modern ve Karşıtı Örneklerde Geometriye Farklı Bakışlar”, *Mimarlık ve Felsefe*, p.98-103, İstanbul, YEM Publications.

Journal Articles : “İTÜ. Mimarlık Fakültesi Mimarlık, İç Mimarlık ve Peyzaj Mimarlığı Lisans Programları Birinci Yıl Mimari Tasarım Stüdyosu”, *Arkitekt*, Nr 2006/04-05 (506-507), p.8-26.(with N. Esin, O. Hacıhasanoğlu, I. Hacıhasanoğlu, and other group tutors)

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National Conference Papers : **Sıkıçakar, A.,** Berk, O., “Çukurcuma’da Bir İnfill Çalışması”, *İstanbul’un Problem Noktaları ve Öğrenci Çalışmalarıyla Çözüm Arayışları*, symposium papers, İstanbul, 1990, p.108-119.

Published Workshop : **Sıkıçakar, A.,** “Atölye Metafor” on Workshop and Exhibition, chapter in the CD of Kent Atölyeleri (City Workshops) as an addition to “Etik-Estetik” Architecture and Philosophy Symposium Papers, YEM, 2004

Yamaçlı, R., Tiftik Kutlusan, C., **Sıkıçakar, A.,** Tokman, L., “From Romans to 2000”, Student Workshop-Architecture, History and Technology, FIDE 98 Proceedings, 14-16 October 1998, İ.T.Ü. Taşkışla.

Unpublished theses:

Sıkıçakar, A., “Birinci Ulusal Mimarlık Dönemi Giriş Cepheleri Analizi”, Master Dissertation, April 1991, Supervisor Prof.Dr. Ferhan Yürekli.

Other papers delivered in conferences:

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Delivered Seminars and Workshops:

Aydınlı, S., Aksoy, M., Akpınar, İ., **Sıkiçakar, A.**, “Beyoğlu-Algı ve His”, 6. Ulusal Mimarlık Öğrencileri Buluşması, 6-10 February 2002

Yamaçlı, R., Koca, G., Tokman, L., **Sıkiçakar, A.**, “Global Network for Sustainable Urban Design”, Student Workshop- Platform C-Kapadokya-Ürgüp, (Exhibit. Uçhisar), Sept. 2000.

Sıkiçakar, A., “Mimarlık Kuramları – 18.Yy ve İlk Modernler”, 3 March 1999 (seminar delivered for Chamber of Architects – Istanbul Metropolitan Branch-Taksim.

Sıkiçakar, A., “Felsefeden Mimarlığa İki Bakış: Mekan ve Mekansallık”, 12 July 1996, delivered during Anatolia University, Eng-Arch. Faculty, Dept. of Arch, ‘Kent Okuma’ Workshop organized 8-22 July 1996, Eskişehir

Teymur, N. (Coordinator), “Matristanbul, İstanbul Soru(n)(sal)ları, Kartolojik tasarım” a 3-step workshop and exhibition, I.T.U. Taskısla, March 1993.

Academic Translations:

“A Plea for Presentism”, from English to Turkish, conference paper by Prof.Dr. P. Ludlow for “Time” conference, 18-19 October 2000, Istanbul University, Faculty of Literature, Department of Philosophy (presented at the conference but unpublished)

Congress and Conference Organisation:

6th ARCHENG’10- International Symposium Organization Committee Member, 26-27 November 2010, European University of Lefke

Organizer of Lunch-time Talks, 2009-2010 Spring Semester, European University of Lefke, Department of Architecture and Interior Architecture.

Mimarlık-Felsefe Konulu Paneller ve Açıkoturum-1 (Panels and Roundtable Discussions on Architecture and Philosophy-1), Organization Committee Member, 12-13 December 2000, Taskısla, ITU.

Projects directed and participated:

Coordinator -Prof.Dr. Hasan Şener, “Tekel Mecidiyeköy Factory–Main Production Unit, Re-measuring, Re-evaluation and New Interior Design Project”, I.T.U.Rectorate, U.Y.G.A.R. Center

“I.T.U. Faculty of Mechanical Engineering–Information Office” implementation of architectural design, December 1999-May 2000, “Display Units for Faculty Awards-Dean’s Hall”- application 2000.

“I.T.U. Faculty of Mechanical Engineering–Information Office” layout design, 1999.
“Awards Display Wall design-Dean’s Hall, 1999. Office design for “I.C.A.T.” group, 1998. Landscape (re)design for the courtyard near the student canteen, 1999

“Conversion of old laboratories of Electrical Engineering Faculty as the Student Canteen and Student Club Spaces of Mechanical Engineering Faculty at I.T.U. Gümüşsuyu Campus”, detail designs and control of project implementation, 26 June-6 November 1998.

“Initial designs for Conversion of old laboratories of Electrical Engineering Faculty to Student Canteen and Student Club Spaces of Mechanical Engineering Faculty at I.T.U. Gümüşsuyu Campus, May 1997, Application projects June 1998.

Façade drawings of streets in Urfa and Diyarbakır, for the research project; “Castle Cities” by Assoc.Prof.Dr. A. Sema Kubat, 1993.

“Hüseyin Avunduk House” in Rumelihisarı, Application and detail projects for, M.F.U. Construction Company with Architect Mehmet Doruk, 1989.

“Trabzon Municipality Hotel” application and detail projects, I.T.U. Design Office,1987. With Assoc.Prof.Dr. Gülsün Sağlamer, Assoc.Prof.Dr. HülyaYürekli, Assoc.Prof.Dr. Ferhan Yürekli Group.

“Layout Proposals for Marmara University, Faculty of Dentistry, at Ihlamur Site, prepared for İlhan Erginbaş, 1987.

“Tekin Günver-Rahmi Gürler Villas, Boğaziçi, İstanbul” Application Projects,I.T.U. Design Office, 1986, with Assoc.Prof.Dr. Ferhan Yürekli, Assoc.Prof.Dr. HülyaYürekli, Assoc.Prof.Dr. Gülsün Sağlamer Group.

Relevant areas of expertise:

Design Theory and Criticism of Architectural Design

Design Studio

Philosophy of Kant, Heidegger, Early Modernity, Modernity, Critique of Modernity, Aesthetics as a philosophical discipline,

Philosophy of Art and Science, some sub-areas as Perception and Metaphor, etc.

History of Art, esp. history of perspective

Early Republican and Republican Turkish Architecture

Awards and Grants:

First Prize- Istanbul Beyazıt Square Architectural Design Competition-1988 Prof. Dr. Vedia Dökmeci and Architect Yaprak Karlıdağ design team- senior design assistant.

Invitation for design competition - “Tarlabaşı Boulevard Architectural Design Competition” -1988, Prof. Dr. Vedia Dökmeci and Architect Yaprak Karlıdağ design team- senior design assistant.

Invited Speaker-Speech delivered on “Turkish Houses”, 23 September 1998, Invitation by Holland-DenHaag Municipality for discussing ‘Voyage to New’ project.

Visitor- “History and Theory of Architecture”, Cambridge University, Department of Architecture, Postgraduate Classes of Dr. Vesely, October 1993-June 1994.

Anglia Polytechnic University (Anglia Ruskin University) Department of Philosophy, Undergraduate Classes, Cambridge, UK, October 1994- June 1995:

- “*Kant*”, “*Heidegger*”, “*Introduction to Literary and Aesthetic Theory*” by Prof. Bowie,
- “*Rationalism: Descartes, Spinoza, Leibniz*”, “*Descartes and Pascal*” by D. Isaac,
- “*Nietzsche and Bergson*” by D. Isaac and Dr. A. Ainley,
- “*Classical Greek Philosophy: Plato and Aristotle*” by Dr. A. Ainley,
- “*German Idealism: Kant, Fichte, Schelling, Hegel*”, “*Critique of Idealism*”, “*Philosophy of Art*”, “*Philosophy of Science*” by C. Harper.

Studio Teaching: University of Cambridge, Department of Architecture, 1st Year Architectural Design Studio, January-February 1994 – Invited by Peter Sparks-First year studio coordinator.

