

The rhythmic organisation of stepping stones addresses directly the body and muscular sense without an intellectual content or mediation. The *sawatari-ishi*, 'steps across the marsh', in the garden of the Heian Shrine in Kyoto, Japan.

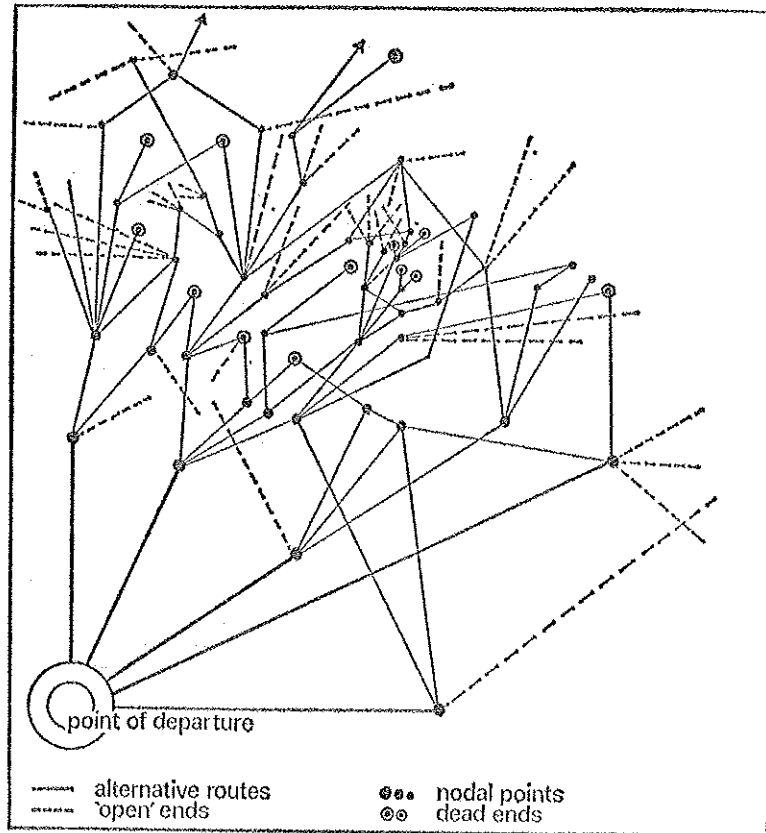
Embodied Thinking

'Rodin's hands were his principal tools, and with them he plopped and punched and gouged and smoothed, making both curves and straight lines wavy, allowing shoulders to flow into torsos and torsos to emerge from blocks (even when they hadn't), encouraging elbows to establish their own identity, his fingers everywhere busy at fostering the impressions of life, giving strength and will to plaster, ethereality and spirit to stone.'

William H Gass¹

Creative Fusion

A creative insight in architecture is rarely an instantaneous intellectual discovery that could reveal a complex entity in its complete and finite resolution in a moment; neither is it a linear process of logical deduction. Most often the process begins with an initial idea that is developed for a while, but soon the concept branches out to new paths, and this pattern of criss-crossing trajectories grows ever denser through the process itself. Design is a process of going back and forth among hundreds of

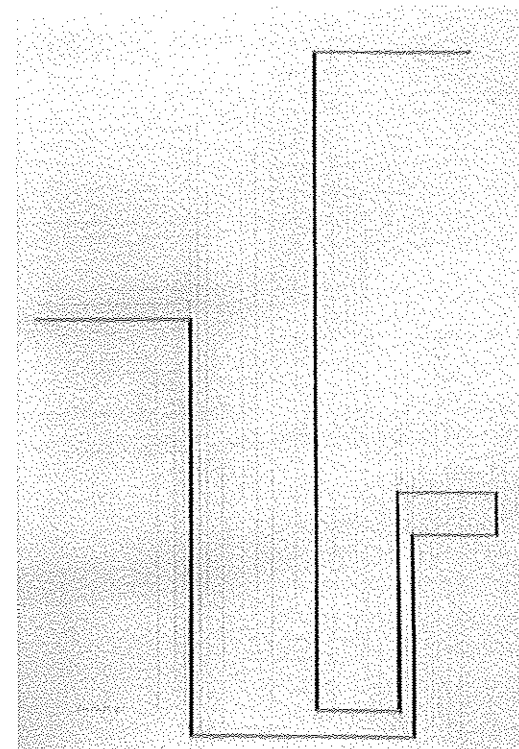


Anton Ehrenzweig's chart for creative scanning: 'The maze (serial structure) of a creative search. The creative thinker has to advance on a broad front keeping open many options. He must gain a comprehensive view of the entire structure of the way ahead without being able to focus on any single possibility' reads his caption for the chart in *The Hidden Order of Art* (1973). In my view, the creative maze is even more complex than Ehrenzweig's chart due to repeated turning back to already passed phases or rejected ideas, and entirely new beginnings.

ideas, where partial solutions and details are repeatedly tested in order to gradually reveal and fuse a complete rendition of the thousands of demands and criteria, as well as the architect's personal ideals of coordination and harmonisation, into a complete architectural or artistic entity. An architectural project is not only a result of a problem-solving process, as it is also a metaphysical proposition that expresses the maker's mental world and his/her understanding of the human life world. The design process simultaneously scans the inner and the outer worlds and intertwines the two universes.

More often than not, the initial idea and first elaboration of the scheme have to be abandoned and the entire process started anew. This is a search in the obscurity and darkness of uncertainty, in which a subjective certainty

Erased lines of sketching are part of the final drawing, and they reveal the sequence of trial and error and suggest a dimension of time and spatial depth. Juhana Blomstedt, *Drawing*, charcoal on paper, 106 x 76 cm, 1985.

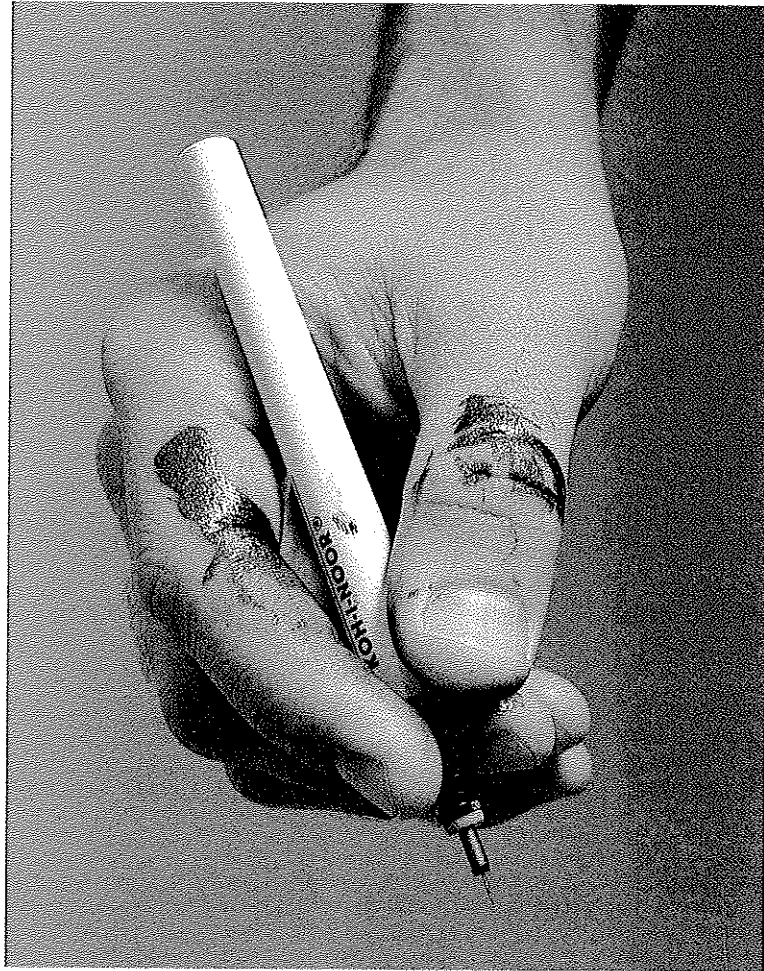


is gradually achieved through the laborious process of the search itself. This search is as much an embodied and tactile journey, guided by the hand and feelings of the body, as it is a visual and intellectual enterprise. An architectural task is not a simple logistical or rational problem to be solved. In architectural design both the appropriate end and the means have to be identified and concretised. In addition to resolving rational problems and fulfilling functional, technical and other demands, profound architecture is always expected to evoke human, experiential and existential values that cannot be prescribed. Every true piece of architecture relocates man in the world and casts some new light on man's existential enigma. Every architectural task that is taken seriously also calls for a distinct idealisation of the situation, the client and the future use of the building. Architecture needs to build a better world, and this projection of an idealised human dimension calls for an existential wisdom rather than professional expertise, skill and experience. In fact a design task is an existential exploration in which the architect's professional knowledge, life experiences, ethical and aesthetic

sensibilities, mind and body, eye and hand, as well as his/her entire persona and existential wisdom eventually merge.

The Work of Thinking: The Value of Uncertainty

Creative thinking is *work*, labour, in the proper meaning of the word, rather than merely an unexpected and effortless flash of insight. Such miracles may only happen to a true genius, but even in such a case the genius has laboriously worked his/her way to the threshold of realisation. Work is usually a sweaty and messy business. I personally want to see the traces, stains and dirt of my work, the layering of erased lines, errors and failures, the repeated re-tracings on the drawing, and the collage of corrections, additions and eliminations on the page that I am writing, for as long as I am developing an idea. These traces help me to feel the continuity and purposefulness of the work, to dwell in the



The dirt of work on a draughtsman's hand.

work, and to grasp the multiplicity, the plasticity as it were, of the task. They also help me to maintain the mental state of uncertainty, hesitation and undecidedness needed in the process for long enough. A sense of certainty, satisfaction and finality that arises too early can be catastrophic. The hesitancy of the drawing itself expresses and maintains my own inner uncertainty. Most importantly, the sense of uncertainty maintains and stimulates curiosity. As long as uncertainty is not permitted to escalate into hopelessness and depression, it is a driving force and source of motivation in the creative process. Design is always a search for something that is unknown

in advance, or an exploration into an alien territory, and the design process itself, the actions of the searching hands, need to express the essence of this mental journey.

Joseph Brodsky points out the value of insecurity and uncertainty for the creative endeavour. His perceptive and ethically uncompromising views of the poet's task have taught me a great deal concerning the architect's mission. 'In the business of writing, what one accumulates is not expertise but uncertainties,'² the poet confesses, and I feel that a sincere architect likewise ends up accumulating uncertainties. Brodsky connects uncertainty with a sense of humility: 'Poetry is a tremendous school of insecurity and uncertainty [...] [P]oetry – writing it as well as reading it – will teach you humility, and rather quickly at that. Especially if you are both writing and reading it.'³ This observation surely applies to architecture as well, as it can be particularly humbling if you are both making it and theorising about it. But the poet suggests that these mental states which are usually considered detrimental can actually be turned into a creative advantage: 'If this [uncertainty or insecurity] does not destroy you, insecurity and uncertainty in the end become your intimate friends and you almost attribute to them an intelligence all their own,' the poet advises.⁴

Billy Collins, another poet, explains why he insists on writing with pen or pencil rather than keyboard: 'I always compose by either pen or pencil, only because the keyboard, to me, makes everything kind of look done, look frozen, and writing on a page gives me a feeling of fluidity, that what I'm writing is provisional for the moment. And also since I don't know where the poem is going and I don't want to know until I get there, I always feel like the poem, as I'm writing, it is working toward some kind of understanding of itself.'⁵

I personally share the poets' views. In both writing and drawing, the text and image need to be emancipated from a preconceived sense of purpose, goal and path. When one is young and narrow-minded, one wants the text and drawing to concretise a preconceived idea, to give the idea an instant and precise shape. Through a growing capacity to tolerate uncertainty, vagueness, lack of definition and precision, momentary illogic and open-endedness, one gradually learns the skill of cooperating with one's work, and allowing the work to make its suggestions and take its own unexpected turns and moves. Instead of dictating a thought, the thinking process turns into an act of waiting, listening, collaboration and dialogue. The work becomes a journey

that may take one to places and continents which one has never visited before, or whose existence has been unknown prior to having been guided there by the work of one's own hand and imagination, and one's combined attitude of hesitation and curiosity.

There is an inherent opposition between the definite and the indefinite in art. An artistic phenomenon wants to escape definition until it has reached its self-sufficient existence – and even beyond that point, I believe. Simply expressed, true creative fusion always achieves more than can be projected by any theory, and profound design always achieves more than the brief or anyone participating in the process could anticipate.

I have to confess personally that ever since the foolishly self-assured days of my youth (that – of course disguised – genuine uncertainty, narrowness of understanding, and short-sightedness), my sense of uncertainty has grown constantly to the degree that it has become nearly intolerable. Every issue, every question, each detail, is so deeply embedded in the mysteries of human existence that often there does not seem to exist a satisfactory answer or response at all. In a fundamental sense, I can say that by age and experience one becomes increasingly more an amateur, rather than turning into a professional possessing immediate and assured responses. An established and successful professional would hardly stop to ponder questions such as, what is the floor, the window, or the door. But can anyone really tell me what are the fundamental metaphysical essences of these architectural events, and their human significance, outside and before a specific design task?

Resistance, Tradition and Freedom

A word that one hears rather often in the studios of schools of architecture, and in juries of architectural competitions, is 'Freedom'. The word seems to describe an artistic independence of the project. Independence from tradition and precedents, structural or material constraints, or sheer reason, is usually seen as a dimension of artistic freedom. Yet already Leonardo da Vinci taught us that 'strength is born from constraints and it dies in freedom'.⁶

It is thought-provoking, indeed, that great artists of any era rarely speak of the dimension of freedom in their work. They emphasise the role of restrictions and constraints in their materials and artistic medium, the cultural and social situation, and the shaping of their personality and style. The

greatness of an artist arises from the identification of his/her own territory and personal limits, rather than an indeterminate desire for freedom. Instead of longing for freedom, they emphasise the disciplined, tradition-bound character of their art form. In his memoirs *My Life and My Films*, Jean Renoir writes about the 'resistance of technique'⁷ in filmmaking, while Igor Stravinsky speaks of 'the resistance of material and technique'⁸ as important counterforces in his work as a composer. Stravinsky scorns any yearning for freedom: 'The ones who try to avoid subordination support unanimously the opposite counter-traditional view. They reject constraint and they nourish hope – always doomed to failure – of finding the secret of strength in freedom. They do not find anything but the arbitrariness of freaks and disorder, they lose all control, they go astray [...].'⁹ Stravinsky, the arch-modernist of music, argues forcefully that artistic strength and meaning can only derive from tradition. In his view, an artist who deliberately seeks novelty is trapped in his very aspiration: 'His art becomes unique, indeed, in the sense that its world is totally closed and it does not contain any possibility for communication.'¹⁰ The composer holds the concept of tradition so central an ingredient to art that he concludes with the Catalan philosopher Eugeni d'Ors's enigmatic statement, 'Everything that remains outside of tradition is plagiarism.'¹¹

Limits and restrictions are equally important in all arts. Paul Valéry, the poet, states unambiguously: 'The greatest liberty is born of the greatest rigour.'¹² In his book *The Power of Limits* – which studies proportional harmony in nature, art and architecture, and especially the repeated occurrence of the Golden Section in these phenomena – György Doczi notes: '[I]n our fascination with our powers of invention and achievement we have lost sight of the power of limits.'¹³ This is a seminal wisdom in our age – an age that seems to be neglecting the importance of limits.

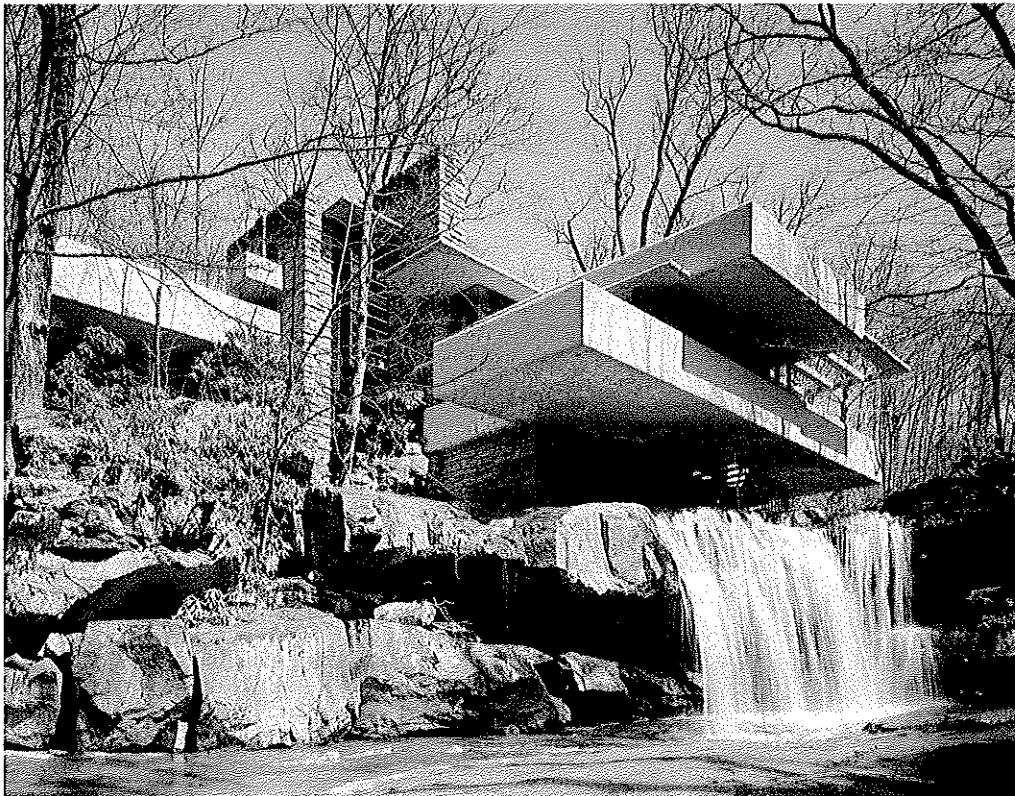
By rejecting the wisdom and resistance of tradition, architecture also drifts towards a deadening uniformity on the one hand, and towards a rootless anarchy of expression on the other. Every art form has its ontology as well as its characteristic field of expression, and limits are posed by its very essence, inner structures and materials. Generating architectural expression from the unquestionable realities of construction is the long tradition of the art of architecture. The tectonic language of architecture, the inner logic of construction itself, expresses gravity and structure, the language of materials as well as processes of construction and details of joining units and materials to one another. In my view, architecture arises from the identification and articulation of the realities of the task in question, rather than from individual

fantasy. Aulis Blomstedt used to advise his students at the Helsinki University of Technology wisely: 'The capacity to imagine situations of life is a more important talent for an architect than the gift of fantasising space.'¹⁴

Thinking Through the Senses

All significant architecture is the result of serious thinking – or, more precisely, of a distinct way of thinking through the medium of architecture. In the same way that cinema is a mode of cinematic thinking, painting a means of articulating painterly ideas, and sculpture a way of elaborating and expressing sculptural thoughts, architecture is a means of philosophising about the world and human existence through the embodied material act of constructing. Architecture develops existential

Architecture creates existential metaphors through space, structure, matter, gravity and light. Great buildings are also icons of life and metaphysical mandalas.
Frank Lloyd Wright, Fallingwater, Edgar J Kaufmann House, Mill Run, Pennsylvania, USA. 1934–7.



and lived metaphors through space, structure, matter, gravity and light. Consequently, architecture does not illustrate or mimic ideas of philosophy, literature, painting or any other art forms; it is a mode of thinking in its own right. The ideas articulated by the arts are painterly, musical, cinematic or architectural thoughts, conceived and expressed through the inherent medium and artistic logic of the particular art form in a dialectical process with its tradition. Artistic ideas are not necessarily ideational and translatable into verbal terms, as they are embodied metaphors of the world and of the particular ways we exist in this world. Also architecture is an artistic expression as far as it transcends its purely utilitarian, technical and rational realm, and turns into a metaphoric expression of the lived world and the human condition.

There is a rather widely accepted view that wants to get rid of the boundaries between various art forms entirely. I for one feel that the ontological differences between various arts are as significant to acknowledge as the commonalities or shared ground of the arts. Every art form has its origins and traditions, and when this ontological backbone of a discipline is lost, the art form weakens – at least if we believe the testimony of Ezra Pound, the arch-modernist poet, in his book *ABC of Reading*: '[M]usic begins to atrophy when it departs too far from dance [...] poetry begins to atrophy when it gets too far from music [...]'¹⁵

In my view, architecture turns similarly into mere aesthetics when it departs from its originary motives of domesticating space and time, an animistic understanding of the world, and the metaphoric representation of the act of construction. Every art form needs to be reconnected with its ontological essence, particularly at periods when the art form tends to turn into an empty aestheticised mannerism. The architectural works of the modern era, as well as of our time, that echo the tremors of origins – such as the works of Sigurd Lewerentz, Louis Kahn, Aldo van Eyck and Peter Zumthor, for example – project an authoritative radiance and depth of feeling. Such works are not always necessarily aesthetically polished as they pose a deep and disturbing emotive power and open up questions rather than provide well-formulated answers. Frank Lloyd Wright's Fallingwater (1934–7) in Mill Run, Pennsylvania, or any other masterpiece of architecture, opens up a new horizon to human existence instead of providing an answer to any question.

Louis Kahn preached the importance of beginnings: 'The spirit of the start is the most marvellous moment at any time for anything. Because in the start

lies the seed for all things that must follow. A thing is unable to start unless it can contain all that ever can come from it. That is the characteristic of a beginning, otherwise it is no beginning – it is a false beginning.¹⁶

Our entire bodily constitution and senses ‘think’ in the fundamental sense of identifying and processing information about our situation in the world, and mediating sensible behavioural responses. In the view of Henry Plotkin, professor of psychobiology, knowledge signifies more than consciously known words or facts: ‘Knowledge is any state in an organism that bears a relationship to the world.’¹⁷ The dancer and the soccer player ‘think’ with their body and legs, the craftsman and sculptor with their hands, and composers with their ears. In fact, our entire body and existential sense participate in all processes of thinking. ‘The dancer has his ear in his toes,’ as Nietzsche argues.¹⁸

In his essay ‘What calls for thinking?’, Martin Heidegger relates thinking with the art of cabinet-making. The philosopher gives the hand an essential role in the processes of thinking and he links the hand with the capacity to speak, a theme that was already discussed in earlier chapters of this book:

Perhaps thinking, too, is just something like building a cabinet. At any rate, it is a craft, a ‘handicraft’, and therefore has a special relationship to the hand. In the common view, the hand is part of our bodily organism. But the hand’s essence can never be determined, or explained, by its being an organ which can grasp. [...] The hand is infinitely different from all the grasping organs, [...] different by an abyss of essence. Only a being who can speak, that is, think, can have hands and can handily achieve works of handicraft.¹⁹

An artistic thought is not merely a conceptual or logical deduction, it implies an existential understanding and a synthesis of lived experience that fuses perception, memory and desire. Perception fuses memory with the actual percept, and consequently, even ordinary sense perceptions are complex processes of comparison and evaluation.

Embodied Memory and Thought

Merleau-Ponty extends the idea of the processes of embodied thinking to include the entire body as he argues: ‘The painter “takes his body with him” (says Paul Valéry). Indeed we cannot imagine how a mind could paint.’²⁰ It is

surely equally unthinkable that a mind could conceive architecture because of the irreplaceable role of the body in the very constitution of architecture. Buildings are not abstract, meaningless constructions, or aesthetic compositions, they are extensions and shelters of our bodies, memories, identities and minds. Consequently, architecture arises from existentially true confrontations, experiences, recollections and aspirations.

The most abstract of tasks would become nonsensical when detached from its ground in human embodiment. Even abstract art articulates the ‘flesh of the world’,²¹ and we share that very flesh, as well as the gravitational reality of the world, with our bodies. ‘The mind is not merely embodied, but embodied in such a way that our conceptual system draws largely upon the commonalities of our bodies and of the environments we live in,’ as the authors of *Philosophy in the Flesh* argue.²² We are occupants of this world with its physical realities and mental mysteries, not outside observers or theoreticians of the world.

The body is also part of our system of memory. Philosopher Edward S Casey, who has written seminal phenomenological studies on place, memory and imagination, points out the role of the body in the act of memorising: ‘Body memory is [...] the natural center of any sensitive account of remembering.’²³ In another context he elaborates his view: ‘There is no memory without body memory [...] In claiming this, I do not mean to say that whenever we remember, we are in fact directly engaging in body memory. [...] Rather, I am saying that we could not remember [...] without having the capacity for body memory.’²⁴ Furthermore, there are recent philosophical studies, such as *The Body in the Mind* by Mark Johnson, and *Philosophy in the Flesh* by Johnson and George Lakoff, that argue emphatically for the embodied nature of thinking itself.²⁵

In my own collaboration with painters, sculptors and craftsmen extending over four decades, I have learnt to admire their capacity to grasp essences of things through their hands and bodies, and through their non-conceptualised existential understanding rather than through intellectual and verbal analyses. They rely on the silent wisdom of the body and the hand. I have also had the chance to observe that the hand and the body produce distinctly different ideas than the head. The latter tend to be conceptual, intellectual, and geometricised ideas whereas the former usually project a spontaneity, sensuality and tactility. The hand registers and measures the pulse of lived reality.

An embodied manner of learning and maintaining skills as well as responding to life situations is the dominant mode of knowledge also in traditional societies. Learning a skill is primarily a matter of embodied muscular mimesis acquired through practice rather than conceptual or verbalised instruction. I cannot personally recall much talking in my youth at my grandfather's farm; everyday life and work took place 'in the flesh' of farm life, everyone knew his or her place in the family and the cycles of daily work, and everyone learnt and remembered countless practical skills as embodied patterns of life and work itself. I cannot recall anyone ever asking another whether he/she could do a certain thing; it was naturally assumed that everyone could do everything required in the tasks of daily farm life. The farmer's knowledge was constituted of crucial embodied skills that were coded into the seasons and cycles of the year and the concrete situations of daily life rather than books and notes.

Existential Knowledge

The prevailing view in our culture makes a fundamental distinction between the worlds of science and art. Science is understood to represent the realm of normality, and of rational and objective knowledge, whereas art stands for the world of subjective, emotional and essentially irrational sensations. The first is understood to possess an instrumental and operational value, whereas the second is seen as a form of exclusive cultural entertainment.

In an interview in 1990 concerning complexities and mysteries of new physics, Steven Weinberg, who won the Nobel Prize in Physics in 1979 for his discovery of the relationship between electromagnetism and the weak nuclear force, was asked: 'Whom would you ask about the complexity of life. Shakespeare or Einstein?' The physicist answered immediately: 'Oh, for the complexity of life, there's no question – Shakespeare.' And the interviewer continued: 'And you would go to Einstein for simplicity?' 'Yes, for a sense of why things are the way they are – not why people are the way they are, because that's the end of such a long chain of inference ...'²⁶

Art articulates our existentially essential experiences, but as has been pointed out in the previous chapter, it also represents particular modes of thinking. Reactions to the world and processing of information take place directly as an embodied and sensory activity without being turned into concepts or even entering the sphere of consciousness.

It is evident that we need to rethink some of the very foundations of architectural experience and making in the light of these arguments. In addition to balancing the visual bias in architectural thinking, we need to be critical of approaching architecture with an intellectual and logistical emphasis. A wise and mature architect works with his/her entire body and sense of self. While working on a building or an object, the architect is simultaneously engaged in the reverse perspective of his/her self-image in relation to the world, and his/her existential knowledge. In addition to *operative and instrumental knowledge* and skills, the designer and the artist need *existential knowledge* moulded by their experiences of life. Existential knowledge arises from the way the person experiences and expresses his/her existence, and this knowledge provides the most important context for ethical judgment. In design work, these two categories of knowledge merge, and as a consequence, the building is a rational object of utility and an artistic/existential metaphor at the same time.

All professions and disciplines contain both categories of knowledge in varying degrees and configurations. The instrumental dimensions of a craft can be theorised, researched, taught and incorporated in the practice fairly rationally, whereas the existential dimensions are integrated within one's own self-identity, life experience and ethical sense as well as one's personal sense of mission. The category of existential wisdom is also much more difficult to teach, if not outright impossible. Yet, it is the irreplaceable condition for creative work. It is thought-provoking, indeed, to recognise that in most countries there is hardly any formal academic education for poets and novelists; their work is so strongly based on existential knowledge that these artists are expected to emerge and grow without explicit pedagogically formalised education.

The teaching of existential wisdom in education takes place primarily through the growth of one's personality, which is often a reflection of the teacher's persona and character on the self-identity of the student. This life wisdom is a slow accumulation of experience, a gradual maturation of personality and an internalisation – I would again use the word *embodiment* – of a sense of responsibility and ambition. By ambition I am not referring to social aspirations or goals, but to one's internal sense of responsibility and honour, and the willingness to cross limits of one's prior skills and knowledge.

Heidegger considers teaching even more difficult than learning: 'Teaching is even more difficult than learning [...] Not because the teacher must have a larger store of information, and have it always ready. Teaching is more difficult than learning because what teaching calls for is this: to let learn. The real teacher, in fact, lets nothing else be learned than – learning.'²⁷ The difficulty of teaching concerns especially the task of teaching existential wisdom.

Rainer Maria Rilke provides a moving and poetic description of the existential knowledge required for the writing of a single line of verse:

For verses are not, as people imagine, simply feelings [...] they are experiences. For the sake of a single verse, one must see many cities, men and things, one must know the animals, one must feel how the birds fly and know the gesture with which the little flowers open in the morning. [...] And still it is not yet enough to have memories. One must be able to forget them when they are many and one must have the great patience to wait until they come again. For it is not yet the memories themselves. Not till they have turned to blood within us, to glance and gesture, nameless and no longer to be distinguished from ourselves – not till then can it happen that in a most rare hour the first word of a verse arises in their midst and goes forth from them.²⁸

The qualifications for writing a line of verse listed by one of the finest poets of all time should surely humble anyone seeking to become a poet, artist or architect.

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- 5 Interview of Billy Collins, 'Jazzmouth' festival bulletin, Portsmouth, 2008. The interview was brought to my attention by Glenn Murcutt, architect, who shares my views on the significance of the hand.
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