accesibles es una medida de respeto hacia las habilidades y la dignidad de todo individuo. La naturaleza y el significado de los impedimentos sensoriales que involucra la comunicación es naturalmente demasiado amplio, y las implicaciones demasiado específicas, para tratarlos dentro del marco de este artículo. Sin embargo, su importancia para los diseñadores es que tanto las presunciones como el entendimiento superficial sobre ellos pueden llevar a la planificación de comunicación inadecuada. Se ha hecho necesario desarrollar un interés más que superficial sobre estas cuestiones.

### Conclusión

Los conceptos expuestos aquí dan una medida de las preocupaciones para la planificación de la comunicación ambiental. Claro que existen otras. Pero se intenta plantear unas cuestiones básicas sobre cómo hallar caminos en ambientes construidos. Los que intervienen en su planificación y diseño tienen que proceder con un sano escepticismo ya que ni los programas de signos mejor diseñados pueden corregir problemas intrínsecos a la presentación del espacio, sino a lo mejor sólo minimizarlos. Además, la habilidad de la disciplina para atraer la colaboración de las diferentes áreas del saber, como la antropología, la psicología o la lingüística podría aportar una perspectiva y una base de investigación únicas, de relieve invalorable para resolver estos complejos problemas de comunicación.

Vivimos en paisajes urbanos y arquitectónicos sobreseñalizados. Las aventuras comerciales han impuesto sin misericordia un ataque visual en todos los aspectos del ambiente construido. Patéticos y sobredimensionados, insidiosos y aplastantes, los múltiples disfraces de la llamada señalización emergen a nuestro alrededor. Tenemos que filtrar, seleccionar, discernir. Por desgracia, nos inmunizamos frente a la contaminación visual y nos hacemos más condescendientes con su brutalidad. El reto que queda es planificar e implementar la comunicación eficiente en el ambiente de manera parsimoniosa. Hemos de planificar la calidad, no la cantidad. Y nunca debemos permitir que los signos aplasten la arquitectura, las ciudades o las personas. Al reconocer sus propios defectos, puede ser que la disciplina de la comunicación ambiental no se vea tentada a repetir otro ataque visual en nombre de hallar caminos.

# Environmental communication: planning concepts and practices

#### Introduction

Buildings and letterforms have always maintained a strong link in our Western culture. From the monumental Latin inscriptions of ancient Rome to Renaissance palazzi, from elegant Art Déco facades to quaint storefronts, we have nurtured a preoccupation for words, and, consequently, verbal messages become permanently integrated to architecture. While originally resulting from an intention to commemorate, symbolically announce, or simply identify a particular site or building, these almost poetic connections between words and buildings have all been transcended. The massive physical and economic growth that most urban societies have experienced imposed profound changes in the very purpose of incorporating communication in the constructed environment. Simple messages that once just embellished or identified have become insufficient. The intricate expansion of the urban fabric, the systematic growth of transportation needs and the speculative advances of commercial developments have all, regrettably, disfigured the scale, legibility and formal attributes of our cities. This imposes new challenges and obstacles. We must find our way within true urban and architectural labyrinths.

Due to ill-conceived regulatory policies, preserving our visual environments free of «visual congestion» has been very difficult, and we are bombarded with myriad visual appeals, often of doubtful significance. The proliferation of unrestricted visual communication in cities nowadays is such that entire urban settings become nothing but a backdrop, where signs of all kinds, frequently serving commercial purposes, are perpetrators of a progressive degeneration of what constitutes the «legible» image of a city. This desirable image, whose functions are defined by the spatial expression of spaces and by architecture, is often replaced by a pervasive, self-replenishing flow of overscaled graphic appeals which in no way contribute to the legibility of the environment. These visual aggressions shift our attention from details, ornaments, textures and nuances of form which enable us to «read»

and to understand our surroundings. It is a harmful pattern, whereby meaningful communication becomes camouflaged, and these communications, whether inform or content, make of contextually responsive signs more an exception than a rule. Regrettably, our daily coexistence with such conflicting visual appeals progressively desensitizes us, teaching us to be suspicious of «signs».

The succesful integration of visual communication in the constructed environment remains a tentative proposition. Whether in the monotony of high-rises, the repetitious, undifferentiated maze of hospitals, or the visually polluted commercial districts where buildings are silently overwhelmed by signs of all kinds, finding ourselves lost or disoriented is all too common and decidedly unpleasant. As we age or develop sensory limitations or impairments, a fact of inevitable certainty, these problems can take on intimidating proportions. Conceived as a structured and formal design activity, environmental communication emerges as an important area of research and practice, involving implementation of sign and communication systems with the specific intention of providing relief from the visual or spatial ambiguities we confront daily. Whether bringing order and purpose to complex settings, making building functions more explicit, or simply creating a «sense of place», it becomes a mediating language between our actions and environment. Interdisciplinary in nature, bringing visual designers, industrial designers and architects into close cooperation, the main purpose of environmental communication is to fulfill a need that things be kept decipherable, approachable, and on a human scale.

In recent years, one of the main focuses of environmental communication has been the area of wayfinding, which, as authors Arthur and Passini define it, is a much-needed new design discipline involving spatial and communication problem-solving. Abraham Moles also reminds us that the environment has a material aspect involving the recognition of universal elements of daily life such as a door, stairs, street, etc. and an aspect of signs, which are symbolic elements there to represent things or actions. According to his view, the new role to be played by the visual designer is «that of a sign engineer who precisely designates the symbolic aspects of the environment to prepare us for real actions».

#### Early planning and programming

Whether urban, architectural or transport related, wayfinding is a type of activity requiring both extensive research and programming. Recognizing this for a project's core organization is essential from the outset. These concerns are basic to establish clear design goals and to conceive an approach sensitive to user needs and responsive to different contexts. Detailed site surveys, for example, are essential means to reveal what communication strategies might be used, what forms the visual and content articulation might take, and in what ways the spatial complexity and overall visual appearance of a setting might affect the medium, formats, or more generally the «hardware» which will support the communication content. Since public information and communication needs are obviously quite distinct in different spatial settings, it is difficult to establish design criteria independent of their many idiosyncracies. Documenting and analyzing functional and visual attributes is also a way of preventing graphic specifications from being proposed within a limited visual/formal vocabulary, an approach which can only lead to institutionalized, impersonal appearing results.

Since in planning wayfinding systems we must anticipate first-time users, visitors, etc., it is important to incorporate design provisions which support an effective interaction between user and communication. Users often respond intuitively to new situations (an unfamiliar setting, for example) by relying on previously-learned behaviour. Thus, metaphors can be a positive influence on the user's emotional attitude and response towards a visual communication system. However, in selecting a metaphor, we must account for unintended interpretations or some degree of learning before they become effective. *Hierarchical mapping* is also a form of familiarizing users with relationships among parts. Knowing the degree of importance of the individual spatial components to the whole can gratly reduce ambiguities and simplify decision-making. This process can be supported by designing messages which encourage the user to look for main destinations and then be «led» to other functionally related spaces. Additionally, factors such as the design language itself are determinants, to the extent that users will be engaged in decoding messages presented to them. The communication process between design and user does not begin until the user turns his or her mind to the message. Combined with the user's experience, interests or needs, the design language then becomes a major factor in the success or failure of communication. These factors can be played out in a schematic design phase whose primary objective is an exploration of specific design concepts, focused on desirable visual and performance attributes. The schematic design is akin to an architectural blueprint, providing an overview of all the essential components of the program and an opportunity for performance issues such as legibility, information structuring, symbol comprehension, etc. to be tested for later integration into the overall design concept. Programming wayfinding systems in a detailed way can also have a significant impact towards reducing information requirements, making the entire system simpler, more effective and less intimidating to users.

A good example of a wayfinding program which has become a model with respect to planning large public communication systems is the one implemented at the Louvre Museum. Using the metaphor of a city (Paris), and dividing the museum's vast architectural maze into neighbourhoods (arrondissements), designers Carbone and Smolan proposed a system which divides the museum into major destination zones, directing visitors to wings of the building as opposed to specific galleries or collections. The city analogy is intuitive and simple to understand: while navigating in a city, we must first get to a neighbourhood before we look for a street address. These major destination zones (or neighbourhoods), named after historical figures, are then subdivided by a grid and number system which, aside from avoiding language problems, are not collection-based, therefore offering complete flexibility for the relocation of works of art. Visitors use multi-language printed guides to find where major attractions are, and during periods of renovation or spatial reconfiguration, this system maintains the architecturally-based signs intact. Moreover, the visual articulation of typography, diagramatic maps, colours and finishes is perfectly compatible and harmonious with the building complex. Detailed planning was responsible for such clear communication goals that enabled the design team to effectively approach this enormously complex problem. The result is a very explicit and accessible system.

#### Form, performance and context

The consideration of human factors in the design of visual communication is only recently gaining importance. If scrutinized, many «successful» solutions often reveal goalsand approaches dictated by aesthetic concerns, where an explicit definition of performance criteria in their design remains a sporadic occurrence. In contrast, environmental communication problems have, by virtue of their own constraints, forced designers to look more systematically at functional concerns. No longer within the realm of traditional communication formats in print, environmental communication and wayfinding in particular, involves situations where user behaviour and actions must be determined or modified almost immediately. The flow of messages in an airport, for instance, must provide unequivocal directions for passengers to locate departure gates quickly and efficiently. Wayfinding systems are made up of various components which must perform distinct information tasks synchronically. They must also prove to be reliable, offering a distinct measure of an environment's accessibility to its users.

Two attributes a wayfinding system must possess, flexibility and adaptability, are perhaps among the most important to ensure a seamless continuity of form and content across changing environmental conditions. Spatial lay-out, unbalanced amounts of lighting, additions or renovations which may alter the unified architectural expression of spaces, are all conditions affecting how users and spaces interact. Consequently, design provisions such as forms, information structuring, materials, etc., must respond to these unique requirements. Older rail terminals offer a good example of challenging conditions that might be imposed on a design language for wayfinding. Many large stations (particularly in Europe) were built around the turn of the last century with a distinct architectural and spatial set of attributes reflecting functional concerns dictated by rail transport at that time. As rail transportation evolved into what it is today -where sophisticated high-speed trains, modernizations and renovations have altered their spatial layout- integrating environmental communication in such settings has become a challenge. Communication formats, including new technologies for displaying schedules and travel information, must often coexist with the dominant architectural expression of nineteenth century buildings. Materials must also sensibly

account for existing finishes and architectural details; thus any visual program, to appear contextualy correct, must successfully cross the boundaries between functionality and uniqueness.

A concern for contextual responsiveness should be manifest very early in the design process. Maintaining desirable contextual boundaries once again suggests the importance of a careful programming phase, offering a set of basic parameters to guide design concepts. Programming activities also help to establish parameters which sensibly account for the type of human activity an environment must support and the desirable quality of that experience. In the case of buildings or architectural settings still in the planning stages, the benefits of direct observations and documentation are not possible, and therefore a close collaboration with architects and urban planners is essential. This leads to a deeper understanding of how future users might negotiate their way in those spaces. In either case, the goal is to arrive at concepts which appear visually compatible and formally integrated with their surroundings. While these programming activities are essentially the same, whether the site is a rail station, museum, or zoo, their implications to the design concept are not so simple to define or characterize. As we have seen, each environment, and, by extension, each environmental communication problem, exhibits unique aspects which must be taken into account. A constructive approach to analyze these aspects is to look at them from three distinct perspectives: cognitive, semantic and perceptual.

The *cognitive dimension* is that of user behaviour: how people negotiate the spaces, what patterns are systematically manifested in their interaction with the constructed environment, and what can be learned from such patterns. The semantic dimension is that of communication itself: how forms and words convey meaning, what symbolism or metaphors might be used, and how shades of meaning affect our «reading» of the environment. Finally, the perceptual dimension is that of our senses: what conditions must be satisfied for our sensory system to effectively assimilate messages, to discriminate meaningful form and to take action accordingly. These three dimensions are sometimes clearly delimited, sometimes intertwined, but they seem invariably significant in defining a correct design approach.

#### The cognitive dimension

The primary function of signs is to either descriptively or symbolically represent the «unknown». They become mediators between the space and the user. Although wayfinding, in a strict sense, is characteristically a process dependent on perception, it is also one of conscious development of spatial models. In that sense, it becomes one of cognitive representations «constructed» as mental maps which guide our actions. This combination of perceptually guided action (what we see), with voluntary cognitive action (what we imagine), forms the basis of our wayfinding strategies. Signs then become major players in this process, literally preparing us for a course of action, and, through symbolic means, providing a «sampling» of the environment. This process of cognitive mapping is a form of mentally structuring visual/spatial information that we are supplied with by our immediate surroundings, while signs assist us to conclude what neighbouring spaces beyond our line of sight might be like, and to form a mental picture or model of a particular setting.

Obviously, the spatial attributes of a given setting can affect our ability to form an adequate cognitive map, but, even though in rudimentary form, we still rely on some form of spatial representation to establish orientation and a plan of action. We would seldom venture into a setting hoping to stumble upon our destination; thus navigation is a planned activity based on the assumed accuracy of the models we create. In wayfinding, as in other everyday actions, behaviour is determined by a combination of internal knowledge and external information. We may, for instance, successfully navigate through a city without necessarily being able to describe the route in detail, relying more on perceptually guided action and instinctively capitalizing on visual clues. But when confronting an unfamiliar setting, our tacit knowledge of the environment may not be that useful, and we instinctively turn to more explicit forms of communication, such as signs. This has important implications for the planning and design of environmental communication. First, it suggests that providing means for users to «sample» or anticipate spatial configurations beyond their immediate visual reach is very important. Second, it suggests that whenever those means are provided -in the form of verbal or pictorial signifiers- that their codes of representation must be clear and understandable, allowing the «sampling» of a setting to be accurate.

Third, it demands adequate amounts of information strategically placed along the user's trajectory. These «information parcels» must not exceed what users can effectively process, memorize, or readily use for cognitive mapping activities.

Codes of representation deserve special attention because they are ultimately the mediators between reality and those aspects of reality which must be selected, emphasized, and visually stated for effective use in wayfinding. Not only must verbal messages, spatial representations (maps, diagrams, etc.) and symbols be articulated in forms compatible with our deciphering abilities, but they must also present information in proportions relevant to the complexity of our wayfinding tasks. In an anecdotal account, it is said that a king once asked his most skilled cartographer to create the best, most accurate map of the kingdom yet. To which the cartographer replied that it would not be possible. Puzzled by the unexpected answer, the king asked why. «It would be as large as your entire kingdom», the cartographer replied. The hidden truth in the anecdote is that maps are cognitive, not real representations, of the environment. Every map is the result of a process of selecting and transforming information, and it is therefore impossible or at least impractical to represent every possible detail. Not uncommonly, it is actually the simplicity of the notation or mapping system versus the complexity of the environment that ensures we are provided only with the information we can effectively process. Any large subway system offers a good example of a navigational tool whose design logic has become archetypical, thus suggesting its internal cognitive logic: the network map. This form of spatial representation uses representation codes which seem to depict successfully a potentially confusing multiplicity of options among lines, directions, points of exchange, etc. While grossly inaccurate in relation to scale, physical features of the routes and real travelling distances, they are, nonetheless, quite effective. Such forms of mapping and diagramming can offer, in a logical, unintimidating way, the most relevant aspects of reality which are most needed for orientation within those settings. Planning the location and content of signs in transportation settings is not a simple proposition though, and we are constantly reminded of the difficulties users may experience while attempting to memorize routes, deal with language barriers, or interpret symbols. 

The semantic dimension and the second of the second product of the Although the word «semantics» refers to a linguistic mode of communication, there is clearly a semantic dimension in the forms and spaces of the constructed environment. The physical expression of a space can in itself be a strong element of communication which enables us to perceive functional aspects, construct mental models of our surroundings, or interpret spatial properties, to guide our actions for orientation and navigation. We have all experienced the disorienting effect that an undifferentiated and repetitive succession of spaces can have when trying to locate a specific room in a large building. Conversely, environments may have, through a clear spatial articulation, an intrinsic ability to communicate main destinations, circulation paths, ponts of egress, etc., where the individual expression of spaces and their subsequent structuring (or lay-out) may be such that it affords us a much deeper understanding of spatial relationships? Although we tend to draw navigational conclusions from preconceived expectations, there is undeniably a clear suggestion of these expectations being inferred from the physical expressions of spaces. As wayfinding authors Arthur and Passini point out, «one of the main disorienting characteristics of a labyrinth is precisely its inherent ability to be understood in spatial terms or to be mentally represented in the form of a cognitive map», which explains how certain spaces can be enorand the state of the 1. 1 mously frustrating to users.

This level of semantic expression is not limited to the more obvious attributes of scale, volume, or repetition. Architectural finishes and details, textures, lighting, colour, etc., are also communication factors ready to influence the behaviour of users. In a recent userbehaviour study for a major local museum in the city of Pittsburgh, this was clearly demonstrated: in a lavishly done entrance space, with imposing marble columns and staircase, users frequently missed two elevators, incorrectly assuming their ornate brass-relief doors to be entrances to «staff offices» or «conference rooms». The semantic expression of these doors is very different from what learned behaviour has taught about elevator doors. Users therefore established a completely different association between form and function, denotation and connotation. «Visual landmarks» can also have a profound impact on how successfully we negotiate through spaces. Consciously exploring these more elusive, but no less significant levels

of communication can result in far more effective wayfinding/systems. What is intrinsically encoded in spatial terms or three-dimensional forms has its own sensory and communicative appeal, with, sometimes, very discreet) and meaningful connotation for users, a fact perhaps not fully explored yet in wayfinding systems. Designer Lance Wyman has clearly demonstrated the effectiveness of a similar strategy, first in the Mexico. City subway, and later in the Edmonton pedway, by integrating, «landmark» pictograms in their sign systems. These pictograms are presented to users as visual references to important architectural landmarks in the vicinity, thus, establishing a very reassuring connection between the symbolic representations and reality. and reality. anthe semantic dimension of language is another strong factor either favourable or unfavourable to the comprehension of sign messages. As George Bernard Shaw once stated: "The danger in communication is the illusion that it has been accomplished.» Nothing could express more eloquently the risks involved in the choice of words for public communication, or how. critical that is for a system's clarity and accuracy. Users with adequate reading and comprehension skillssmay, still be confused by messages articulated in language that is anything but plain and direct. There is ample evidence of the enormous language barriers involved in sign programs for health care facilities where visitors and patients alike are suddenly confronted with incomprehensible medical terms designating specific. treatment facilities. Beyond these more obvious semantic barriers involving comprehension, information groupings also greatly affect how we wread sign messages. We have structured and consistent patterns of reading, left to right, top to bottom, which somehow are affected when reading messages in the environment. In other words, while apprehending visual messages in signs, we turn to a relatively unstructured way of scanning which requires messages to be displayed in rather specific forms of organization in order to be easily and effectively assimilated. It is known through testing, for example, that groupings of three message units (each containing one or more words) is more effective than a continuous listing of the same number of message units (We) seem to be far better equipped to assimilateoinformation that has been organized on chunks, with distinct visual intervals between them.

Pictographic and symbolic representation in a broad sense is well documented, but their integration in visual communication systems is still poorly understood. Since the use of symbols and pictograms is ubiquitous in large signing programs, their semantic dimension must be carefully understood if we are not to frush trate users with visual codings of great ambiguity, Seductive notions of «universal» meaning can also be, misleading, etransforming these encortabling uages with into an form of communication panacea. Mt is worth considering that whenever pictorial representations are used; they presuppose our ability to decipher them? Therefore, the assumption that pictograms are always understood may result in their unrestricted application, with a significant share of the communicational content becoming ineffective. Coupled with the economy of expression found in most pictographic and syme bolic representations, which seem to reduce visual elements to their most elemental state, no intrinsic clarity on visual coding can be claimed, 'except that through systematic use we eventually accept their references to; reality. Additionally, these codes are culturally biased, and highly dependent on the user's realm of experience, ambiguous, and arerto be avoided. A good rule of common sense is that pictograms and symbols are most effective when used as anchoring devices for verbalsmessagesg neverbas: substitutes. The advertise of a terrat Richne aubilitation of continuous clausely sterio as and jum qui applications. Conversi in particular is The perceptual dimension of the space proves of a spread -idale own a solidate by dama own of bugolovill, on Few would argue that the singular, most elemental condition (for communication to take place is our set of sensory faculties. Vision and hearing being the primary sources of perceptual stimuli for communication; they are, by extension, the ones most likely to receive both purposeful messages and «noise». Perceiving information directly relevant to wayfiding may in some cases involve a considerable effort. Particularly in complex settings, or, as we have seen, in already oversigned environments, the discernment of meaningful stimuli may be rendered ambiguous, and the implications for environmental communication are clear: its design has to become a form of conscious intervention, bringing a new level of accessibility to the information involving spatial orientation, navigation, and safety. Even perfectly able individuals will, under unfavourable conditions, experience difficulty in perceiving (and effectively retaining) sign messages. A person's psychological state; for instance, may significantly alter the mechanisms of perception. It is no accident that airports are so communication-intensive, with substantial redundancy and repetition in the display of information: these are high stress environments. Paradoxically, the information redundancy meant to aid a person's wayfinding can itself become a factor of stress and, coupled with inadequate lighting, visual obstructions, or excessive ambient noise, cause an information overload. Many of the environments with which we routinely come in contact are intrinsically complex, either by virtue of their functions or scale, and perception under such conditions are not effortless. Let us consider the perception of text, for instance: assuming propercontrast, sizes, and a reasonably structured pattern, typography on a page exists within a context usually supportive of the act of reading. Viewing can be adjusted, and the whole process is carried out with no major obstacles. In an environment, however, infinitely more complex and multidimensional, «visual noise» may cause textual and pictorial elements to become absorbed, camouflaged.

Sign legibility is, of course, a major concern. Besides the distinctive visual characteristics of individual typefaces, affecting the perception of discrete units (letters) and message units (words), it is really how information is visually articulated and presented to viewers what ultimately determines their legibility and efficiency in sign applications. Contrast in particular is one of the most critical. So much so, that British Rail has developed its own standard alphabet in two slightly different versions, with subtle provisions to compensate for differences when displaying in positive or negative form, in order that their visual impact appear identical. The intention is to compensate for halation. As research findings on legibility become increasingly available, it seems reasonable to expect that designers involved with communication in the environment will recognize their significance when planning wayfinding systems.

Readability, on the other hand, seems a relatively elusive concept and, while critically important, its parameters are far more difficult to establish. More an attribute of comprehension than of perception alone, it is, however, directly related to legibility. Readability is what enables text to be not only seen, but also understood; therefore, the provisions for readability are never purely perceptual: information density, visual hierarchy, and pictorial/diagrammatic encoding are all determining factors in the user's ability to read and comprehend the graphic display of signs. Text on signs must afford a logical, ordered, and sequential apprehension of message units; information must be structured specifically to support an effective scanning of content. In this sense, being able to discriminate things perceptually (their «legibility») is just the essential means for assimilation of meaning. The sensory and the cognitive are truly inseparable, and the development of sign messages with communicational clarity requires an iterative approach, with emphasis on user testing and observation.

The issue of user accessibility in a broad sense is, by extension, directly related to perceptual concerns. Designers have been making use of legibility testing, either directly or through published studies. However, much of the data available involving legibility reflects testing under laboratory ideals, with proper amounts of lighting and 20/20 vision. Of the user population being served by environmental communication of all kinds, only a percentage fits that profile, so that the whole notion of perceptual impairments has remained, until recently, largely ignored. «Disabilities» are not, as is often presumed, limited to those virtually and permanently impaired. They are a gradual, degenerative process of the senses which will, in varying degrees, affect all of us. Poor vision, for example, is a form of visual impairment far more common than we may want to admit. As we age, conditions we normally cope with such as glare, angle distortion, and poor lighting become serious obstacles for reading even the most conspicuous messages. Our abilities may be so significantly reduced that we become virtually incapacitated to use communication devices intended to help us. Colour-blindness, as another example, affects about 10% of the male population, rendering colourcoding for wayfinding ineffective for one of ten male individuals. Because of our reliance on assistive communication devices in the environment, planning accessible designs is a measure of respect for the functional abilities and dignity of all individuals. The nature and significance of sensory impairments involving communication is naturally too broad, and the implications too specific, to be dealt with in the framework of this article. Nonetheless, their relevance for designers is that either assumptions or a superficial understanding about them can lead to inadequate communication planning. Developing more than a cursory interest in these matters has become a necessity.

## Conclusion

The concepts put forth here provide a measure of concerns for the planning of environmental communication. There are others, of course. But the intention is to raise some basic issues involving wayfinding in constructed spaces. Those engaging in its planning and design must proceed with a healthy scepticism, since even the best signing programs can never correct problems intrinsic to spatial lay-out but perhaps only minimize them. Furthermore, the discipline's ability to attract the collaboration of distinct areas of knowledge, such as anthropology, psychology, or linguistics could bring about a unique perspective and research base of invaluable relevance in solving these complex communication problems.

We live in oversigned urban and architectural landscapes. Commercial ventures have ruthlessly imposed a visual assault on every aspect of the constructed environment. Pathetic and overscaled, insidious and overriding, the many guises of so-called signage emerge all around us. We are supposed to filter, to select, to discern. Sadly, we are becoming immune to visual pollution and growing increasingly condescending of its brutality. The remaining challenge in planning and implementing effective communication in the environment is to be parsimonious. We must plan for quality, not quantity. And we must never allow signs to overwhelm architecture, cities, or people. By recognizing its own limitations, perhaps the discipline of environmental communication might not be tempted to repeat another visual assault in the name of wayfinding.