

ART, MEDIA, AND SENSE-MAKING IN RESPONSIVE URBAN ENVIRONMENTS

by
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The aim of the article is to elucidate experience and sense-making in interactive, responsive urban environments through analysis of aesthetic and media aspects of art in such environments. As an analytic example, the sculpture D-Tower in the Dutch town of Doetinchem has been chosen. The sculpture was created by the artist Q. S. Serafijn and the architect Lars Spuybroek. The analysis will be carried out with reference to Neuro-Aesthetic Theory; its methodological point of departure is in Conceptual Metaphor Theory, Blending Theory and Cognitive Semiotics. The main hypothesis is that when artistic and interactive, responsive media qualities are blended, new forms of experience and sense-making are promoted. This may happen due to emergence and adaptation, transforming both the 'experiencee' and the experiential environment. In the present case, information technology has been applied in order to make hitherto invisible and private emotions visible and public.

Keywords: blending, cognitive semiotics, artifice, experience, interactive media, 'D-tower'.

... the arts [...] are containers for, moulders of feeling.
Ellen Dissanayake: *Homo Aestheticus* (1995: 46)

Local and Distal, Visible and Invisible

Traditionally, media are conceived as materialities and/or as mechanical-electronic technologies, e.g. like printed matter or TV that can transmit messages among communicators. With the advent of experience economy and experience culture, both public and private organizations have increasingly embedded interactive media technology into the built environment and its three-dimensional artifacts in ever new ways. This has been done with the intention to inform, and to elicit experiences and new re-cognition for receivers in aesthetically challenging ways. These ways have often been aimed at the forms of co-ordination of the sensual impressions, movements and body operations that users of urban spaces, i.e. citizens, commuters, passing travelers, tourists and others must carry out in order to move about adequately and sensibly.

The combination of modern interactive, digital media and three-dimensional aesthetic artifacts – architecture and sculpture – can be seen to appear in increasing numbers in urban environments like brandscapes, 'culturescapes', theme parks and in big city neighborhoods.¹ Here, users and consumers are subjected to new types of functional and aesthetic spatial initiatives that often promote and intensify performative behavior and response and, consequently, experiences, when the users are physically and mentally involved.

Apparently, this has been the intention behind the project of the so-called D-Tower in the Eastern Dutch town of Doetinchem. D-Tower is a 38 ft. tall construction made out of the material epoxy. Further components of the project comprise a homepage and a computer based survey with a database.² Below, the focus will be on D-Tower's particular spatial aesthetics and its media-related and responsive qualities (see Figs. 1 and 2).



Fig. 1. *The D-Tower in Daylight*



Fig. 2. *The D-Tower at Night*

At first sight, the D-Tower presents itself visually in the urban space with an expression that, apart from its height, implies something organically inspired, rather than a constructed artifact like a tower. That it may have a certain similarity to a 'being' or something organic is supported by statements from persons living in Doetinchem asked at random. These persons said that D-Tower looked like a 'clenched fist', like a 'pulled tooth' or an 'alien'. They all thought that D-Tower was ugly and they did not know about D-Tower's potential media qualities.³

The D-Tower has been designed by the Dutch artist Q.S. Serafijn in co-operation with the Dutch architect Lars Spuybroek from NOX Architects.⁴ NOX Architects are also the people behind the interactive part of the project. The tower was erected in 2004 on a corner of the intersection Grutstraat-Keppelseweg and Europaweg at the edge of the Doetinchem town centre, where it presents itself and its material artistic expression to passing travelers and citizens in the local urban space. What is remarkable about the sculpture, however, is that after darkness falls, it displays the current mood or emotional state among the citizens by glowing in one of four colours.

Each 'mood' or emotion has its own symbolic colour, red for love, blue for happiness, yellow for fear, and green for hate.

The colour of the day is determined in the following way. A selected number of citizens from different parts of Doetinchem who have registered voluntarily for a survey period, initially answer a number of questions on a homepage. The survey continues with four new questions every other day, and the answers are processed by a computer connected to the homepage and the D-Tower. This method/progression ensures, among other things, that persons without a permanent address in Doetinchem cannot take part in the ongoing survey. The computer processes the answers statistically, calculates the emotional atmosphere of the city, and activates the correct topical colour, presented by means of coloured light to the onlookers in the urban space around the sculpture. In this way, the D-Tower transmits the emotional mood of the day to the citizens around it. In addition, the graphic representations of the results are updated on the homepage, so that those who are interested can track the development of the city atmosphere on the Internet.⁵

The question remains how to understand the interplay between aesthetic form, meaning and experience in the physical environment around the D-Tower.

The sculpture is at the same time a work of art that – especially during the day, and just like other sculptural media – communicates with spectators in the local urban space in a traditional three-dimensional way. But the sculpture also functions like an electronic-digital public service medium that after dark, lights up like a 'beacon' in the particular topical colour, transmitting information about the emotional atmosphere of the city, from the local authorities to passing citizens, commuters, tourists, and so on. Its two states of presentation can be summarized schematically in the following way (see Fig. 3):

Space Time/24 hours	Centre	Periphery
State 1: Daylight	Sculpture	Local visible surroundings
State 2: Darkness	Sculpture + colours	Distal invisible 'surroundings' shown locally

Fig. 3. *The two specific states of D-Tower*

The two states of the sculpture, through which the interplay of artistic, aesthetic, and factual public communication is being transmitted 24/7, will be examined in further detail below. My point of departure is the assumption that the D-Tower, when read as a public service medium relating the normally invisible moods of a collective, will change with regard to its inherent artistic qualities. But also, the aesthetic and artistic qualities of the sculpture seem to be a precondition for its being able to represent what is normally invisible and intangible, namely the emotions and moods of a town, in an involving and experientially engaging way. How this activating, involving, and experiencing unfold will be the subject of further analysis below.

Method

First off, in order to systematically understand the activation and involvement in question, a theory focusing on the sensual, bodily and cognitive processes inherent in sense-making, experience and cognition will have to be employed. In recent years, this kind of theory has emerged in cognitive linguistics, semantics, and semiotics. Here, we find Conceptual Metaphor Theory (CMT) developed by among others George Lakoff, Mark Johnson (Lakoff & Johnson 1980; Johnson 1987; Lakoff 1987); we find the so-called Blending Theory (BT), developed by, among others, cognitive linguists like Gilles Fauconnier and Mark Turner (Fauconnier & Turner 2002);

and finally, there is Cognitive Semiotic Theory (CST) developed by, among others, Line Brandt and Per Aage Brandt (Brandt & Brandt 2005). According to these theories, metaphoric operations possess emergent qualities, i.e. metaphors are able to elicit new meaning and experiences.

Secondly, as our point of departure for the ensuing analysis of aesthetics, meaning and experience in relation to the Doetinchem D-Tower, Roman Jakobson's (1975) four basic semiotic modes, icon, index, symbol, and artifice (based on his revision of Charles Sanders Peirce's definition of semiotic modes) will be called upon to supplement the applied cognitive semiotics-based analysis.

In the traditional view, a metaphor is a linguistic mode of presentation, a trope, where one thing, called tenor or target, is expressed in terms of another, called vehicle or source. The target of the metaphor is the concept to be understood; the source, the means of understanding the metaphor, is derived from a different conceptual domain than the target's. E.g. the target in the metaphor 'politicians should get a red card for failing to take booze out of sports' is 'politics'; the source is 'sports'.⁶

In cognitive conceptual metaphor theory (CMT), the source-target differentiation is maintained, but the focus has shifted from linguistics to the connection between the conceptual and the body. In this way, sense-making is attached to 'bodily knowledge' (or the 'embodied mind'). Specifically, image-schemas that rely on kinaesthetic, i.e. bodily and motor sensations, play a decisive role in sense-making. The philosopher Mark Johnson defines these schemas as "[...] recurrent, dynamical patterns of perceptual interaction and motor programs that give coherence and structure to our experience" (Johnson 1987: xiv); they are assumed to function as underlying gestalt structures, as 'topological skeletons' that through their projection, structure perception and sense-making.

The image schemas are attached to long-term memory; from here, they are activated, especially in habitual and routine actions. It is

estimated that the human mind contains approximately 30 image schemas; Mark Johnson lists 27 (Johnson 1987:126). Examples of kinaesthetic image schemas are the 'container schema' and the 'center-periphery schema' (cf. also Lakoff and Johnson 1980; Lakoff 1987).

Conceptual Metaphor Theory has further developed into the theory of Blending (BT) and Conceptual Integration Network Theory (CIN). Mark Turner describes blending and conceptual integration in the following way:

Blending is a process of conceptual mapping and integration that pervades human thought. A mental space is a small conceptual packet assembled for purposes of thought and action. A mental space network connects an array of mental spaces. A conceptual integration network is a mental space network that contains one or more "blended mental spaces." A blended mental space is an integrated space that receives input projections from other mental spaces in the network and develops emergent structure not available from the inputs. Blending operates under a set of constitutive principles and a set of governing principles.

(<http://markturner.org/blending.html#BOOKS>)

Based on these specifications, the CIN theorists Gilles Fauconnier and Mark Turner (2002) take issue with a number of points in CMT theory. First, they point to the fact that the traditional source-target model must be substituted by a non-linear model that maps the many imaginative, dynamic processes that enter meaning construction in metaphoric blends: mappings, projections, including configurations like frames, force-dynamic structures, and cognitive operations such as composition, completion (the filling out of patterns, frames and schemas) and elaboration (the running of blends). In this way, blending theory has led to an improved understanding

of how our working memory regulates the relation between image schemas in long term memory and the generation of metaphors. Similarly, phenomena like emergence and creativity – i.e. the appearance of meaning in a blend that did not exist previously – have found a better explanation.

A further step in the theoretical development of the cognitive 'embodied mind'-theories is offered by the cognitive semioticians Line Brandt and Per Aage Brandt in their 2005 article *Making Sense of a Blend – A cognitive-semiotic approach to metaphor*. Their point of departure is that expressive blends are signs, and hence communicative phenomena. Therefore, blending is a "cognitive semiotic activity" (2005: 37) that must be studied within the framework of a "cognitive semiotics that studies cognition in semiosis in general" (ibid: 1), understood as "[...] the situation in which utterances or other exchanges of signs occur" (ibid.: 14).

With this, a number of points made in blending theory regarding conceptual integration and blending are questioned. Among other things, it is argued that when the directional–predicative, source–target point of view, derived from CMT, is substituted by a non-directional one, where projections are supposed to flow freely among inputs and blends, it will be up to the individual theorist or interpreter to decide what regulates the flow of material among inputs and blends (ibid.: 38).

Brandt & Brandt make up for this uncertainty by first, reestablishing directionality between source and target such that regulation is supplemented through the attraction of a relevant schema (the 'Interpretant'), and second, by revising the architecture of the blending network in accordance with the communicative view. The result is a remodeling of the blending network as semiosis in a Peircian conception. The revised blending network that shows the structure of the semiosis in terms of mental spaces looks like this (see Fig. 4):

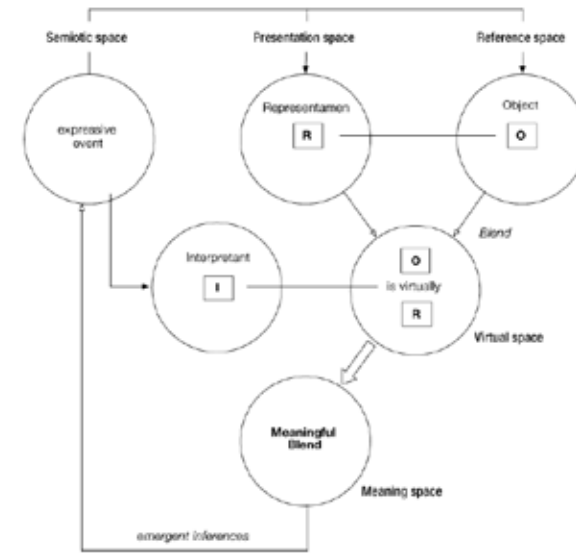


Fig. 4. Brandt & Brandt's Cognitive Semiotic Blending Model (2005: 35)

The model is read in the following way: In the Semiotic Space, the expressive event takes place in the meeting between addresser and addressee. This meeting and the exchange bring about the establishment of two Input Spaces ('space building'). The Presentation Space contains the predicative source, the Representamen, and the Reference Space, the Object, i.e. the target that is being referred to. Projections from the two inputs are blended in the Virtual Space. The virtual character of the blend is ended through the attraction of an Interpretant in form of a relevant schema (Relevance Space).⁷

In this way, the mapping between schema and virtual blend leads to the establishment (emergence) of a meaningful blend in Meaning Space. This meaningful blend is then projected back to Semiotic Space and a new cycle of semiosis may begin.

Sign Categories: Icon, Index, Symbol, and Artifice

In the following, I will adopt the communicative stance of cognitive semiotics to analyze the communicative functions of the D-Tower. The aim is not only to throw light on its sense-making, but also to further specify the sculpture's experiential potentialities. This communicative stance will be supplemented by Roman Jakobson's four different semiotic modes, as presented in the article *A Glance at the Development of Semiotics* (Jakobson 1987). In this article, Jakobson pointed out that in his definition of semiotic types, Peirce took as his point of departure two oppositions – contiguity/similarity and factual/imputed – from which he only deduced three semiotic types, viz. icon, index, and symbol, out of the four possible ones (Peirce 1931:553).

About the fourth, omitted type "Artifice", Jakobson writes:

[...] the factual similarity which typifies *icon* finds its logically foreseeable correlative in the imputed similarity which specifies the *artifice*, and it is precisely for this reason that the latter fits into the whole which is now forever a four part entity of semiotic modes. (Jakobson 1987:451; emphasis original)

Furthermore, Jakobson indicates that in any kind of artistic semiosis, the sign depends on parallelism. Any case of *aliquid pro aliquo* will manifest parallelism, a reference from one sign to another sign, based on similarity with the first one, either completely, or

[...] in one of its two facets (the signans or the signatum). One of the two "correlative" signs [...] refers back to another, present or implied in the same context, as we can see in the case of a metaphor where only the "vehicle" is *in presentia*. (ibid.: 452; emphasis original)

It seems therefore possible to conclude that Artifice, as a sign, **represents** thanks to an imputed similarity, i.e. due to the parallelism between its two components – which may be e.g. in the form of metaphor (A=B) or in the form of a *pars pro toto*, or synecdoche (a⊆A); numerous other ways are also possible, e.g. by using the expressive metrical, sonorous, and other patterns of poetry.

In the contexts in which they appear, metaphors, synecdoches and other parallelisms are characterized by two features. First, there is a certain 'timeless presence', a connecting pattern (also known as 'style'), which presents what must be perceived during the performing moment of interpretation/appropriation. As to 'Artifice' in particular, it 'represents by presenting' – i.e. by ostension. Exactly this makes Artifice an aggregating instance, a communicative link entailing contact and presence, two qualities that are often related to aesthetics.

Second (with the exception of pattern), the parallelisms are not always straightforward, as the imputed similarity of the presentation is never one-to-one, and excess 'fringes' will occur. In the first place, the similarity must be understood as an approximation – not as a factual similarity, let alone an equality (Preziosi 2003: 145); secondarily, it functions as an expansion that may manifest itself in different ways as a 'material surplus', a substance that is not subsumed under the parallelism and remains unexplained, thereby presenting a challenge (Jantzen, Vetner and Bouchet 2011:126).

However, it seems reasonable to conclude that all objects or artifacts possess all four semiotic modes, albeit to varying degrees of prominence (cf. Eco 1976: 262). As regards Artifice, it is of necessity (all other things being equal) the first semiotic mode that the human senses meet in the physical encounter with, and the perception of, an artifact, as this is our entry to further processes of understanding on the several levels of our mental architecture.⁸

Artifice in the form of metaphor is processed and appropriated through blending – i.e. through a process of interpretation focused

on sense-making. Apparently, it so happens that—depending on the particular medium of communication – the other semiotic modes likewise can be brought into play, based on the special qualities they possess.

The D-Tower as experience and meaning

Our analysis of the D-Tower experience that follows below takes its point of departure in Roman Jakobson's sign theory, while incorporating the communicative point of view of cognitive semiotics. Jakobson's sign categories will be inserted into Brandt & Brandt's blending model, revised through the prism of sense-making, so as to shed light on the relationship between aesthetics, perception, experience, and meaning.

In the urban space of Doetinchem town, the D-Tower communicates on at least four different semiotic modal levels. They are indicated on the matrix in Fig. 5.


 D-Tower	Similarity	Contiguity
Factual	<i>Icon</i> 'fist' 'tooth' 'alien' ...	<i>Index</i> 'here' 'centre'
Imputed	<i>Artifice</i> Organic form Colours	<i>Symbol</i> 'Node' Emotions

Fig. 5. Roman Jakobson's typology of signs

In its artifice mode, the D-Tower presents itself visually to viewers in the local urban space as a sculpture: a piece of artwork in which, on a first viewing, the tension between presentation and representation is striking.

The appearance of the sculpture in its organic material form (with or without the colours) poses a challenge to the viewer, due to the tension mentioned above; it elicits a response in the form of suggestions as to what it represents (its iconic meaning, based on its factual similarity to a fist, a tooth, or an alien, etc.). Only insofar as the colour code is sufficiently familiar, will the colour be symbolically attached to one of the emotions. As an index, the sculpture will mark a point, a 'here', a centre that – when measured against a more or less clear periphery – must be assumed to be connected to something important.

In sum, the sculpture poses a challenge for viewers, depending on their varying interests and different background knowledge. Specifically, the challenge may be due to the material surplus of the sculpture, to its provocative, hidden meanings that may throw viewers off balance. However, this is presumably one of the sculpture's experiential communicative points.

Dynamics and Schematics

As has already transpired from its indexical properties, the sculpture can be inserted into a centre-periphery schema. The schematics appear in the two specific versions of the D-Tower. Unfolding over a 24 hour period (see Figures 1 and 2). The two versions relate to two interpretational image-schematic matrixes (see Fig. 6).

Space Time/24 hours	Centre	Periphery	Image-schematic Interpretation matrix
State 1: Daylight	Sculpture	Local visible surroundings	'Centre of periphery'
State 2: Darkness	Sculptur+colour	Distal invisible 'surroundings' shown locally	'Periphery in centre'

Fig. 6. *Image-schematic interpretational matrixes of the D-Tower*

In the daylight version, the D-Tower seems to activate a classic centre-periphery image schema, in which the centre is globally related to what is important and positive, whereas the periphery relates more remotely to what is less important and less positive (cf. Johnson 1987: 124). The citizens asked at random to provide spontaneous interpretations of the D-Tower (as e.g. a tooth), presumably based themselves on the daylight version of the tower.

However, the image schema in Fig. 6, along with its ensuing interpretations, is being interpellated (and possibly supplemented) by the interpretations resulting from the sculpture being connected to the interactive electronic-digital network that links the sculpture's physical centrality to the non-physical, emotional atmospheres in the Doetinchem periphery; as a result, those peripheral states are now centrally represented.

On the basis of the same centre-periphery schema, our semantic understanding of the D-Tower can now be further refined. Basically, the sculpture can be seen as a 'node' attracting and regulating various forces. On the one hand, the daylight version of the sculpture appears as a traditional work of art, expressing itself aesthetically through its physical form. The sculpture's form triggers a number of interpretations on the part of those moving in its local, physical surroundings – interpretations that dialectically engage with the sculpture. The darkness version, on the other hand, as an informative medium makes visible that which cannot be observed physically, but only perceived mentally during a longer stay in the town, namely its emotional atmosphere. These invisible mental states are expressed symbolically by

means of coloured light. Simultaneously, thanks to the input from the electronic-digital medium (the computer that encodes the sculpture's lights on the basis of the answers submitted by the survey respondents), the sculpture invisibly becomes an object of external communication. All in all, the image-schematic centre-periphery structure organizes the semantics of the sculpture along alternating vectors.

The physical surface of the sculpture expresses not only its inherent 'artificial' signs (related to 'Artifice'), but also makes it possible to view the **symbolic** appearance of peripherally perceived bodily moods and emotions. In this way, the sculpture's darkness version appears as a metaphor for the town's concretized, emotionally marked, and concentrated 'embodiment', encapsulating the surroundings and persons present with an emotional 'status report' about the town. Even more importantly, to the citizens of Doetinchem, who must be the primary addressees of the D-Tower's communication, the tower appears as a 'mirror reflection' of themselves, inasmuch as any citizen with the proper 'aesthetic tuning', when looking at the sculpture, must realize that 'this is (an image of also) me'. To tourists on short stays, other out-of-towners and accidental passers-by, the sculpture may relate any array of meanings like the above, but probably with a smaller degree of 'mirror effect'.

The metaphoric blend between sculpture, town, and interpreting bodies accounts for a secondary (perhaps more properly experiential) effect of the sculpture.

The decisive transformation happens following the change from the daylight to the darkness version. It implies a reframing, during which the centre-periphery schema is supplemented with, or replaced by, a container schema. This takes place in the so-called 'mirror'-interpretation, where the viewer realizes that the emotions outwardly presented by the sculpture as light represent emotions embedded 'inside' the town. The transition from 'inside' to 'outside' is connected with, and centered around, a container image schema whose core is 'the body as container'.

This change of schema explains the experiential effect of the sculpture as an attracting 'node', potentially triggering further cognitive implications. This may occur when the individual interpreter realizes that the emotions represent a not too unfamiliar periphery: 'The emotions are relevant to me, as I, too, am part of the periphery'. At this reflective point-of-no-return, the viewer realizes that the sculpture must be interpreted as a 'container', as a 'body' that, unlike him- or herself, carries its emotions visibly on the outside.

The above elucidation of the communication of the D-Tower seems to imply at least five steps or layers in the process of sense-making, relating to the five levels in the mental architecture mentioned above: sensing, perception, apperception, reflection, and affect (Brandt 2007:174). The various steps are summed up using Brandt & Brandt's Cognitive Semiotic Blending Model; the model is revised and expanded in virtue of being invested with Roman Jakobson's semiotic modes (see Fig. 7).

The model is meant to illustrate the implied, experiential appropriation which may, as is well known, be unfolded either totally or in sequential parts, in accordance with the knowledge, interpretative competence, and aesthetic tuning of the interpreters. Confronting the daylight expression of D-Tower as Artifice may alert the senses and perceptive capacities of receivers that perhaps are challenged, due to its material surplus. The structuring capacities of the centre-periphery image schema may, however, not be able to provide sufficient meaning to separate out the sculpture's iconic qualities ('fist', etc.) – something which may further boost its challenge.

The symbolically coded colours of the darkness version may occasion a further revision of the image-schematic grounding. When distal moods and emotions are mapped symbolically and displayed centrally, a possible merging or blending of centre and periphery will call for a new framing (a new relevance schematics) in the form of a container schema. This schema makes it possible for the sculpture's organic, motivating qualities to become more readable, so that it can be read as a 'being' that (unlike the receiver) carries its emotions on the outside. By creating a correspondence between the sculpture and the receiver, the outside-inside structure may produce a reflective identity, in an emerging realization that makes sense to the perceptive citizen: 'If the D-Tower displays a periphery to which I myself belong, then I am looking at (a part of) myself'.

The above will also make it clearer that the experiential potential

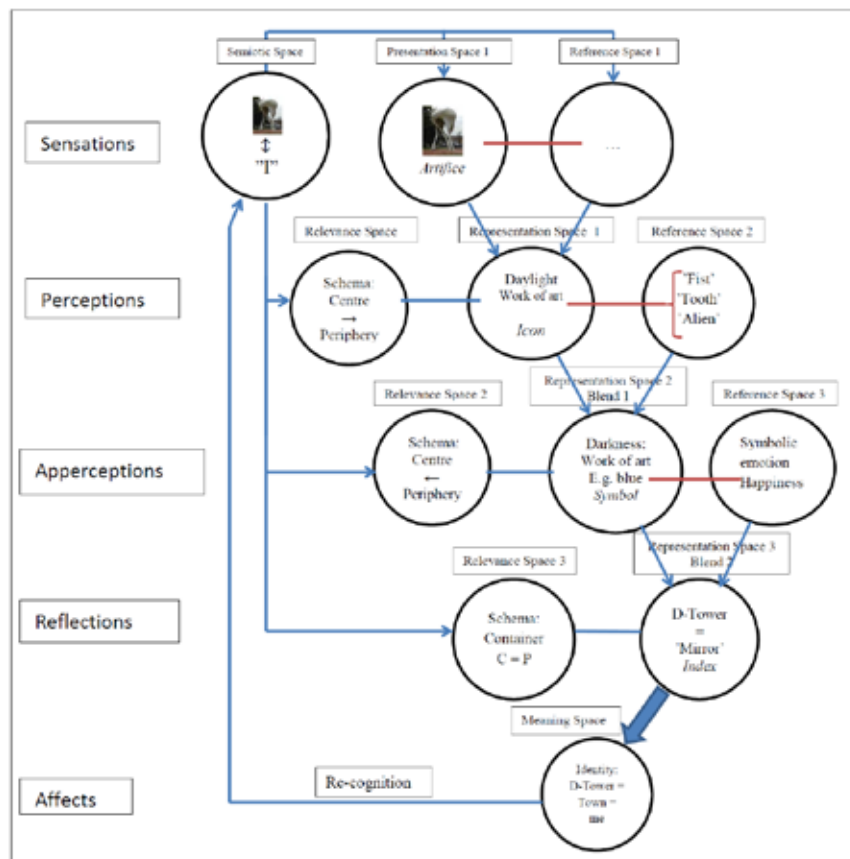


Fig. 7. An Expanded Blending Model

of the D-Tower as a 'node' of attraction has to do with its reflective moment of epiphany, with the receiver experiencing himself/herself split into an "I" and a "me" (cf. Mead 2005: 201 ff.). Experiencing this split will create a further moment of recognition and blending that may result in the receiver's emerging, re-balanced and adapted self-consciousness. This emergent identity will consequently 'close' the initial split and the interrupted flow of meaning, and initiate a new balanced position from where the meaning of the sculpture – and the meaning of art, and of life lived in communion with others – may be reconsidered. In sum, the D-Tower elaborates the five levels in the mental architecture shown in Fig. 7 (Sensation, Perception, Apperception, Reflection, and Affect); they may be compared to the cognitive operations in Blending Theory, composition, completion and elaboration.⁹

The pattern of interpretation that is implied here points to the fact that the important psychological experiential moment is realized in the 'mirror phase', with the emergence of the receiver's identity positioned in the field of tension between splitting and closure.

In other words, good works of art will throw their receivers off balance and challenge their composure, physically and/or mentally. The ensuing fight for recovering composure and meaning is dependent on the presence of artistic means that will allow one to regain possession of oneself and one's environment, albeit from a different point of view. By contrast, lesser quality works of art are characterized by the absence or weakness of such means.

The crucial question is whether the D-Tower is a good work of art, and whether it produces good experiences. As I have shown, the tower generates attention and experiences, and (if read consecutively) it also makes sense. But to which extent it succeeds, also depends on the receivers' 'aesthetic tuning' (as it is often called). If the receivers are not properly tuned in, aesthetically, to what the work of art may offer, then nothing will happen, and the work may just be called 'ugly'.

As is well known, art is not like entertainment that will do anything to please. Quality art does not care (much) about popularity. Quality art respects the *habitus* of the receivers, but makes it possible for it to develop – given a certain effort.

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Links:

<http://www.d-toren.nl/site/read.htm>

<http://www.medienkunstnetz.de/artist/nox/biography/>

<http://www.qsserafijn.nl/artikel/14>

<http://markturner.org/blending.html#BOOKS>

Notes

- 1 See e.g. Allingham (2010) for various items in the Sony Center and Daimler District, Berlin. As an example of interactivity at a smaller scale can be mentioned the NBA Store in New York on 5th Avenue, where customers a few years ago were challenged to a basketball duel by a

- digital replica of the basketball superstar Magic Johnson. At AutoStadt, Wolfsburg, Germany, the guests may take part in car design and other creative activities (Allingham 2012; cf. also Thomsen & Poulsen 2010).
- 2 Cf. <http://www.d-toren.nl/site/read.htm>.
- 3 The statements were recorded during a visit to Doetinchem on August 28, 2012.
- 4 "Nox Architects (Maurice Nio and Lars Spuybroek) is a design company that focuses on both architecture and the media [...]. Lars Spuybroek is principal of NOX, an architecture office in Rotterdam. Since the early 1990s he has been involved in researching the relationship between architecture and media, often more specifically between architecture and computing." (<http://www.medienkunstnetz.de/artist/nox/biography/>).
- 5 <http://www.d-toren.nl/site/read.htm>. On Q.S. Serafijn's homepage, the following is stated: "We reduced the number of questions to 360: 90 for every emotion. Every other day, participants get four questions sent to them at home, one per emotion. They log in to the closed section of the site, using a password, and answer the questions. They have five choices (very much so; yes; somewhat; no; absolutely not; no answer). They can also record comments, to add nuances to their answers. Because of technical limitations, each comment can be a maximum of 300 characters long." Furthermore "[...] we began the project with 55 participants, some of whom quit during the half-year they were involved. [...] We recruited participants through ads in local papers, the website, and flyers. The city then chose the final participants from among the applicants, distributed as evenly as possible across the various postal code areas. The participants form what we hope is a representative sample." (Serafijn & Mulder 2005; and <http://www.qsserafijn.nl/artikel/14>).
- 6 See <http://arrow.dit.ie/buschmarrep/21/>
- 7 The term does not occur in the figure, but has been supplied by me (PA).
- 8 In Brandt (2006:174), a model of the mental architecture is sketched out having five levels that organize attention and through which meaning is processed: sensing, perception, apperception (intentional perception), reflection, and affect. For the actual processing, two principles demand to be respected: First, all levels are both neurally and mentally active; second, the integration among levels does not follow a linear pattern.
- 9 The processing in this case depends on the 24-hour cycle that presupposes a sequence in time. Therefore, the dictum that there is no linear,

hierarchical subsumption among the steps in the mental architecture is subject to discussion. But this does not prevent numerous different forms of reception from taking place (e.g. some receivers may have read about the sculpture before they have seen it, etc.).

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