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TIME IN SCULPTURE: ASPECTS OF PERCEPTION

Abstract

Theoretical works which discuss issues pertaining to sculpture and its perception are in abundance. On the most part, they deal with the plastic qualities of the artworks and their relationship with architecture and the surrounding space; there are numerous formalistic analyses, as well as numerous monographs dedicated to individual authors and works. At the same time though, there appears to be scarcity in works that focus on treating the perceptual side of the issue, if we follow the axis "author – artwork – audience". Along such lines, it makes sense to embark on exploring, as the current text does, the junction between sculpture and the viewer's experience. In more specific terms, the temporal aspects of perceptual experience when viewing sculpture are rarely addressed in a theoretical vein irrespective of the considerable role this question plays for perception. Understandably so, since the problem of time as a general philosophical category is relatively old, but time as a problem of the physical-mathematical sciences, which seek concrete answers to the question of the physical essence and nature of time, have gained importance only recently and in connection with their rapid development. Perceptual psychology also defines time as crucially essential to perception and, in a sense, defining perception itself, whereby accurate measurements are of particular importance. Therefore, it stands to reason that art and its theory are to also pay attention to the problem of time from the perspective of their respective genre specifics.

The subject of the study is the temporal aspect and its multidimensionality in the process of perception of the sculptural work. The astronomical, the perceptual time as well as the time "recreated" by the work are the main categories of time touched upon in this book. The goal here is to address the temporal aspect in the immediate experience of the viewer when viewing sculptural works. To elucidate and structure to a degree the mutlifaceted richness of temporal experiences that are involved at the moment of beholding such artworks, whereby delineating and defining different categories of time is important as well.

In the subsequent pages, time is taken both literally, as a physically measurable quantity, and in psychological terms – as perceptual time. It is often emphasized that one of the main features of time perception in visual arts is the fact that the visual arts have a spatial development, therefore: (a) perceptual time is not temporarily limited the way it is in music or in other arts which develop in time and require retroactive experience; (b) spatial development of artworks lends a degree of freedom to the movement of the viewer around the artwork, in directions of greater or lesser proximity or distance from the artwork, depending on its concrete features and surronding conditions; (c) the transfer of an action developing in time is always mediated by the transmission of movement, i.e. development in space.

In the visual arts, developing on a two-dimensional plane, the movement of the viewer is mainly in the direction of approaching and moving away from the work, in which a change of scale is observed. The greater distance implies a reduction in scale and a more general perception of the picture, in which the general characteristics of

the composition are more readable, etc. The short distance allows for a careful study of the detail and interpretation of the work, where the traces of the instrument on the material, the rhythm and movement of the strokes, also the smears, become visible. As a counterpoint, the text discusses the possibilities as well as the limitations that two-dimensional visual arts offer when one considers movement and temporal developments along such lines.

As regards sculpture, the time associated with the movement of the viewer in the process of artistic perception is discussed as astronomical time. It has been noted that with sculpture this time is actually related to traversing the circular form, whereby size has a bearing on the duration of observation. Some works also allow the viewer to pass through the form – in a way similar to architecture. Richard Serra's works are indicative in this regard – shapes and sizes that require passage "through" the work, a bodily experience of time during movement (*Torqued Ellipses, A Matter of Time,* etc.). This process of motor activity aimed at obtaining visual information includes movements of the body, the head, and to this are added the different types and speed of eye movements as well. In this sense, it is primary and defining for perception and a necessary condition for the category of perceptual time.

The concept of perceptual time is examined from the point of view of neurobiology and psychology, as well as from the philosophical, aesthetic and from the point of view of art theory, the latter being of primary importance to this text. Perceptual time is defined as a complex of neurological time and the emerging complex cognitive processes associated with the estimation of subjective time, as well as that which is required to construct a virtual three-dimensional model with a coordinate system internal to the observed object (following Marr-Nishihara), insofar as the full perception of the sculpture is the priority of this study. In these terms, perceptual time is considered within wider limits than those of the narrow psychological concept.

The plastic solutions for conveying time and the inevitable connection between time and movement are laid out, while the individual solutions are conditioned by the corresponding conceptions of space-time, be they philosophical or physico-mathematical. The analysis offers thoughts on the relationship between artistic theory and practice of movement representation and in connection with psychological theory which may shed light on the issue.

The main plastic solutions can be reduced to two main categories:

1. By juxtaposition of scenes corresponding to different temporal moments of the narrative.
Here I consider in detail the relief of the Fall (11th century) from the bronze doors of Hildesheim Cathedral (The Bernward Doors), cited by Boris Vipper as a prime example of weaving a narrative. I discuss the composition of the reliefs so as to ahow how such a compositional solution is appropriate only when illustrating time that is different from real time, not even past or future, but completely literary and imagined – time in which there are possibilites for different more or less more or less faithful interpretations of real time.

2. Coveying time through movement.

In this rubric some of the philosophical views regarding time and motion are laid out. The essential difference between these two philosophical categories is noted but the argument also emphasizes the impossibility of these two categories to be thought of as absolutely independent of each other, which explains their intertwining in the field of fine art.

2.1. *The Panathinaic Procession* (frieze) – rhythm, interval, movement.

Here the *Panathinaic Procession* relief is considered in the light of one interesting study related to the perceptual illusion of space, as a result of which it appears shorter or longer, depending on whether it is "inside" or remains "outside". The rhythm and grouping of the figures – the fact that at certain intervals there is a figure with its back turned to the others, thus distinguishing/delineating a group of figures for which the two extremes fall "inside" the space they enclose, leads to a "pulsation" of the series, a disruption of the monotonous course of equal space-time intervals.

2.2. Conveying time through visual illustion of movement and the combination of different phases in the movement of a single figure.

2.3. Conveying time through depicting the object at different moments that show the trajectory of movements. The possibility to render time as a fourth spatial dimension. Drapery as a way to "record" movement.

The book allocates considerable space to discussing hypersculpture. First, it provides an overview of what hypersculpture and hyperseeing entail. The term *hypersculpture* was first coined by Nathaniel Friedman, professor of mathematics at the State University of New York at Albany (SUNYA) to designate a phenomenon occurring mostly in North American sculpture and connected with the names of Charles Ginnever, Arthur Silverman, Robert Morris, Tony Smith, and Richard Serra. Some of the artworks of these authors consist of more than one copy of the same object, displayed simultaneously, but with a different spatial orientation relative to the horizontal plane called the "base". Besides the different spatial orientation of the individual objects what also matters for the composition is their arrangement and the varying distances between them. Such an artwork in which one and the same object appears in several copies but in different spatial orientation is what Friedman calls *hypersculpture*, while the process of viewing it is respectively *hyperseeing*.

The first artworks that correspond to hypersculpture in the sense of the definition given by Friedman are *Untitled* (Two Columns), 1961, and Untitled (L-Shapes), 1965-1967, by Robert Morris. Often identified by art critics as one of the main representatives and ideologues of minimal art, Robert Morris mainly pays attention to the dependence of perception on the spatial position of the object, the distance, the proximity to a wall whereby although a viewer knows that the objects are the same in shape and size, he or she does not perceive them as such. The conscious clearing/cleaning of the form and the minimization of its content "in itself" allow Morris to change its spatial status and thus change the "meaning" of the perception. Other authors who follow the definition of hypersculpture are Charles Ginnever, Richard Serra, and Arthur Silverman.

Thereafter, the study presents some artworks of the major representatives of hypersculpture by dwelling on the plastic language typical of each of the artists within the compositional principles of hypersculpture. One of the key authors working within the framework of hypersculpture is Charles Ginnever. Typically, his artworks are characterised by encompassing a lot of space in open forms that are built mainly from steel strips welded along the edges. Critics are generally in agreement that Ginnever's first hypersculpture is *Kitsune* in 1988.

Richard Serra, who was inspired by the richness of perceptual possibilities of *Kitsune*, which he saw during a visit with Ginnever, in turn created several hypersculptures in which, unlike him, he used solid steel blocks in the shape of a rectangular parallelepiped, varying in number and size in different artworks.

Another interesting author Friedman pays attention to is Arthur Silverman and his 2003 hypersculpture *Attitudes*. The characteristic feature of *Attitudes* is that the work is modeled entirely of open planes, and thus the viewer must hyper-see virtual volumes in space, which functions as an additional perceptual stimulus.

3. Hyperseeing: possibilities to "shorten" the time for perception.

Here the argument emphasizes the central importance of time in sculpture, in contrast from the rest of the visual arts, and the discussion dwells in particular on astronomical time and its relevance to the perception of the work. The need to acquire sufficiently rich visual material requires a change of viewpoints so that a sufficient number of views of the work are collected in our visual memory. The questions that are pursued revolve around the relationship between the amount of time we will use to this aim and the size of the work, taking into account the complexity of the observed form. Larger scale and size artworks require more time to walk about them, and therefore our visual memory has to store individual 2D images longer until all the necessary information is gathered for our perceptual system to build a spatial 3D model.

With regard to the latter, i.e. the mental construction of a virtual 3D model, I rely on the theory proposed by David Marr which offers a calculation model as it was rendered in his book *Vision*. The three-dimensional model, irrespective of the observer's point of view, is the one which is built last and is associated with the efficient "storage" of information in memory. The nature of this storage allows us to understand the hypothesis proposed by Marr and Nishihara for the generalization of shapes by means of cylinders. According to this hypothesis, universal elements of "mental constructions" serve as *generalized cylinders* – cylindrical elements with different proportions, sizes and orientation.

The particular form of the objects is described as a transition from global to local reference systems. By cancelling or to a great extent diminishing the time necessary for walking around the artwork, this practice also results in a significant memory benefit, because in classical artwork traversal, all individual 2D models must be stored in memory in order to finally form a virtual 3D model. The above clearly suggests that the practice in question is not devoid of a theoretical basis in the field of perception and really deserves attention as an interesting contemporary current in the field of the classical understanding of sculpture.

In conclusion, after everything that has been said so far, it should be noted that the the question of the aspects of time perception in sculpture, and in fine art in general, has been garnering considerable attention from art theory circles and it is beginning to duly shape as important for understanding and perceiving the wealth of meanings and perceptions in sculptural practice. On the other hand, artists, as people creating works intended to be viewed, "traversed" and "experienced" by many viewers, increasingly take into account in the process of creating the work (choice of form, etc.) the time dimension as a factor of perception, as important as form, material, dimensions and composition (Richard Serra is the most prominent example, but this also applies to Daniel Buren, Anish Kapoor, among others). Elucidating the mechanisms of space-time perception underscores the importance of the question and prompts artists and art theorists to posit possible explanations and interpretations. Art reserves the right not to "conform" to the models and their frameworks created by scientific disciplines, but the subject of art remains the "truth" of human experience with and in the world, and this very same experience is also the subject of science, although viewed from a different angle. Thus, the "artistic truth" about the world and time exists alongside the scientific one – as the exchange of knowledge, experience and vision of things can only be beneficial for everyone, no matter how vague such a statement sounds, taken outside the specifics of the problem at hand.