

On Specificity, Perception and the Neuro-Aesthetics of Film

lectures delivered at Masaryk University, Brno
November-3/4, 2004

László Tarnay

Dept. of Philosophy

Centre of the Study of the Moving Image

University of Pécs

tarnay@btk.pte.hu

General Plan of the Lectures

- (1) Methodological assumptions \Rightarrow**
 - Ontological-ecological and epistemological-cognitive assumptions of specificity
recognition vs. categorical perception**
- (2) Perception and affection: their structure,
functioning and relation \Rightarrow**
 - Microperception \Rightarrow Art as representation \Rightarrow**
 - The ethical aspect of the perception of
specificity**
- (3) A four-layer model of aesthetic perception**

Lecture I

Specificity and Categorical Perception

**Two Different Attitudes toward the
Objects of the World**

References

- **Book**

2004 (w/Tamás Pólya) *Specificity recognition and social cognition*. Berne-Frankfurt a/M-New York-Oxford: Peter Lang.

- **Articles**

2003 “On Visual Argumentation”, in: F. H. van Eemeren, J. A. Blair, and C. A. Willard (eds.) *Proceedings of the Fifth International Conference of the International Society for the Study of Argumentation*. Amsterdam: SIC SAT.

2003 “Recognizing Specificity and Social Cognition”, in: L. I. Komlósi, P. Houtlosser, and M. Leezenberg (eds.) *Proceedings Dutch-Hungarian Intercultural Communication Conference*. Amsterdam: SIC SAT. 91-100.
Subjectivity, Hybridity. Amsterdam: ASCA. 66-71.

2002 “La dialectique de la vue: Le paradoxe du minimalisme narratif dans l'art cinématographique d'Atom Egoyan”, *Degrés* **30** (109/110): h1-14.

2002 “Film Experimentation and the Sublime Experience”, *Journal of Cinema Studies* **1** (2): <http://www.uca.edu/org/ccsmi/journal2/issue2>

2001 “The Ethical Identity of 'Travelling' Subjectivity”, in: J. Gogging & S. Neef (eds.) *Text, Subjectivity, Hybridity*. Amsterdam: ASCA. 66-71.

- **Clips** from dir: *Aspect*

- Atom Egoyan: *The Sweet Hereafter*

- Atom Egoyan: *Exotica*

1. Specificity and Variability

1.1 Ontological Assumption

- **the physical conditions on perceiving specificity – environmental specificity**
 - (i) **patterns of energy:** energy propagates in different forms (mechanical, chemical, kinesthetic, optic, electro-magnetic, gravitational)
 - (ii) **the intrinsic physical variability of Nature:** no two substances have an identical granular structure

- **organ specificity**
- sense organs accomplish a proper trade-off between energy pattern and physical variability:
 - they are said to be attuned to particular types of energy or ‘modalities’
 - they perceive specific material forms like smell, sound, shape, etc. as *indices* of individual objects (⇐ exaption in evolution)
- organ specificity supervenes on physical/environmental specificity

- **two ecological conditions on specificity recognition**
- **proximal stimuli**
 - our sense organs are evolutionarily attuned to extract specific information from the environment (cf. mother/baby relations, wine or whiskey experts)
- **distal condition** (cf. Millikan 1990)
 - certain behaviour based on the uptake of specific information about the world has proved to be beneficiary

1.2 Epistemological Assumption: a Dual Approach to Cognition

- **categorical perception**
 - a capacity to detect and to classify recurrent features in the environment
 - **digital** format
- **individual or specificity recognition (= indexing)**
 - a capacity to recognize or to keep track of specific individuals *qua* individuals
 - **analog** format

1.3 Social-evolutionary Condition

- specificity recognition is a result of the evolution of social cognition: it is only in species living in communities (cf. upper bounds of population size – 120/150 in humans - in Dunbar 1993, 1995) where pair-wise interaction among group members is sufficiently frequent that individual recognition is observable (Wilkinson 2003)

- **the evolutionary condition on specificity recognition**

(C1) Specificity sensitiveness appears at a given evolutionary stage under certain pressures exerted through the physical properties of the niche to enhance and secure reproduction.

- **three distal factors through which selective pressure manifests itself and the recognition of specificity becomes functional**

- (i) the physical aspects of the niche, viz. the variability in the physical substance (sound, color, shape, smell, taste, etc.)

- (ii) the improvement or reinforcement of the reproductive capacity of the organism

- (iii) the contribution to the social coherence of the species the organism belongs to.

- **Wilkinson's note:**

The distinction between individual and group signals is unsure. I discuss different types of calls that carry information about individual identity, such as infant isolation calls, or group identity, such as calls produced by some foraging bats. Grafen has argued that to ensure honesty, all signals must be costly. This basic idea would apply to all signals. Such costs then reduce the likelihood that signals will be used dishonestly. The costs are likely to be incurred as a consequence of ecological factors, such as predation or energetic expense. Calls that contain group specific information are rare in bats and other mammals. Because the bats must learn these calls over time, we suspect that this process effectively eliminates the possibility of cheating.

2. Representationalism and the Bio-Logical Condition on Specificity

- Action Perception Theory (ATP)
- ecological psychology (J.J. Gibson)
- sensorimotor approaches (O'Regan)

- **two main kinds of sensorimotor contingencies to explore the environment**

- i) those fixed by the visual apparatus**

- the distinctively *visual* qualities that are determined by the character of the sensorimotor contingencies set up by the visual apparatus

- ii) those fixed by the character of objects**

- the aspect which corresponds to the encounter with visual *attributes*

- the distinction between two different classes of sensorimotor contingency roughly corresponds to this distinction between sensation and perception
- **Sensorimotor contingencies of the first sort -- those that are determined by the character of the visual apparatus itself -- are independent of any categorization or interpretation of objects and can thus be considered to be a fundamental, underlying aspect of visual *sensation***
- **Sensorimotor contingencies of the second sort - - those pertaining to visual attributes -- are the basis of visual *perception* (O'Regan and Noë 2002)**

- **the functional or bio-logical condition on specificity recognition**

(C2) The variability of physical substance such as smell, sound, face and gait can become functional only in a way that it indicate (or designate) the singular and unique character, viz. the specificity of an individual in any context in which the individual appears. In other words, it becomes functional precisely as a means (an index) to keep track of the individual.

- **Clips** from dir: *index*

- *Pink Panther*

- **types of individuation cues**

Ecological

- **physico-chemical with low level of noise :**
olfactory, tasting, tactile
- **physico-chemical with medium level of noise :**
aural (voices, tones), visual (color)

Ecological-cognitive

- **visual-optical :** gait, face, aspect recognition

Index-assignment : spatial map, context-learning,
linguistic ostension

Cognitive-symbolic : ideosyncretic features (dialect,
clothing)

- **the logical condition on specificity recognition**

(C3) The perception of difference logically and empirically precedes categorial perception. Hence, individual recognition is direct, i.e., it is not mediated by categorial structure or category membership.

3. The Neurobiological Condition on Specificity Recognition

- evidence from neuroanatomy: two visual processing pathways – stimulus selection mechanisms (Miskin/Ungerleider/Macko 1983, Milner/Goodale 1995)
 - **egocentric/dorsal: ‘Where’ / ‘How’**
fine temporal discriminations
 - **allocentric/ventral: ‘What’**
fine spatial discriminations

- **knowing ‘what’ vs. knowing ‘where’**
- We cannot know what something is and where it is at the same time not because we cannot process the two kinds of information simultaneously, but rather because indexing it is tantamount to abstracting from what it is (Pink Panther), or vice versa, knowing what it is is to relate it to a stable system of objects (i.e. the environment). Thus, metamorphosis is possible in two ways, but it is ‘acceptable’ more in the second, that is to say, with a stable reference frame (cf. *Mille e una notte*, *Dr. Cordelier*, *Pink Panther* if we combine water with Shark), rather than in the first indexical way

4. From Affordances to Specificity

- **two nomic correlations** between the following properties:
 - (i) first, between an occurent environmental property o , say, the physical surface of a stem for the marsh periwinkle and an affordance c , the property that it is climeable: ‘ o -ness $\Leftrightarrow c$ -ness’
 - (ii) second, between an optical property of the ambient light, e and an occurent environmental property, that is: ‘ e -ness $\Leftrightarrow o$ -ness’ (Turvey et al. 1981)

- „when one picks up a hammer, the control and monitoring of the actual movements is by the dorsal system but there also occurs intervention of the ventral system that recognizes the hammer as such and directs the movement towards picking up the hammer by the handle and not by the head... Gibson is saying that the direct perception of the affordances of objects enables the organism to act appropriately with regard to those objects, and that this occurs without any mediational mechanisms such as recognition of the object.” (Norman 2002)

- **five senses of affordance**

- (i) invariance in ambient optic array: ‘same’ blobs
- (ii) invariance in environmental properties: ‘Same’ physical properties or extensional unity
- (iii) invariance in property intension: ‘same’ ecologically significant properties or intensional unity
- (iv) invariance in configurations of properties: ‘same’ Object
- (v) invariance in sets of configurations of properties: the same object

- Certainly, reidentifying conspecifics can be deployed for rational action. However, the connection between rational action and recognition is less fixed. The sphere of potential action regarding a family member is much more variegated and undetermined than it is with affordances or concepts. The affordances of a hammer are far more restricted with respect to what the recognition of one's mother affords. It is in this sense that it constitutes an openness to the world. The essentially sensory nature of specificity recognition not only enhances the nonconceptual content of perception but it tells against the Gibsonian dictum that sensory operations are a sort of luxury over and above the extraction of information.

5. Four Conditions of on Representing Systems

5.1 Representations are selectively advantageous

5.2 They allow for misrepresenting

5.3 They imply making comparisons with respect to a given purpose

5.4 They set the scene for switching aspects

5.4. Condition of Comparison

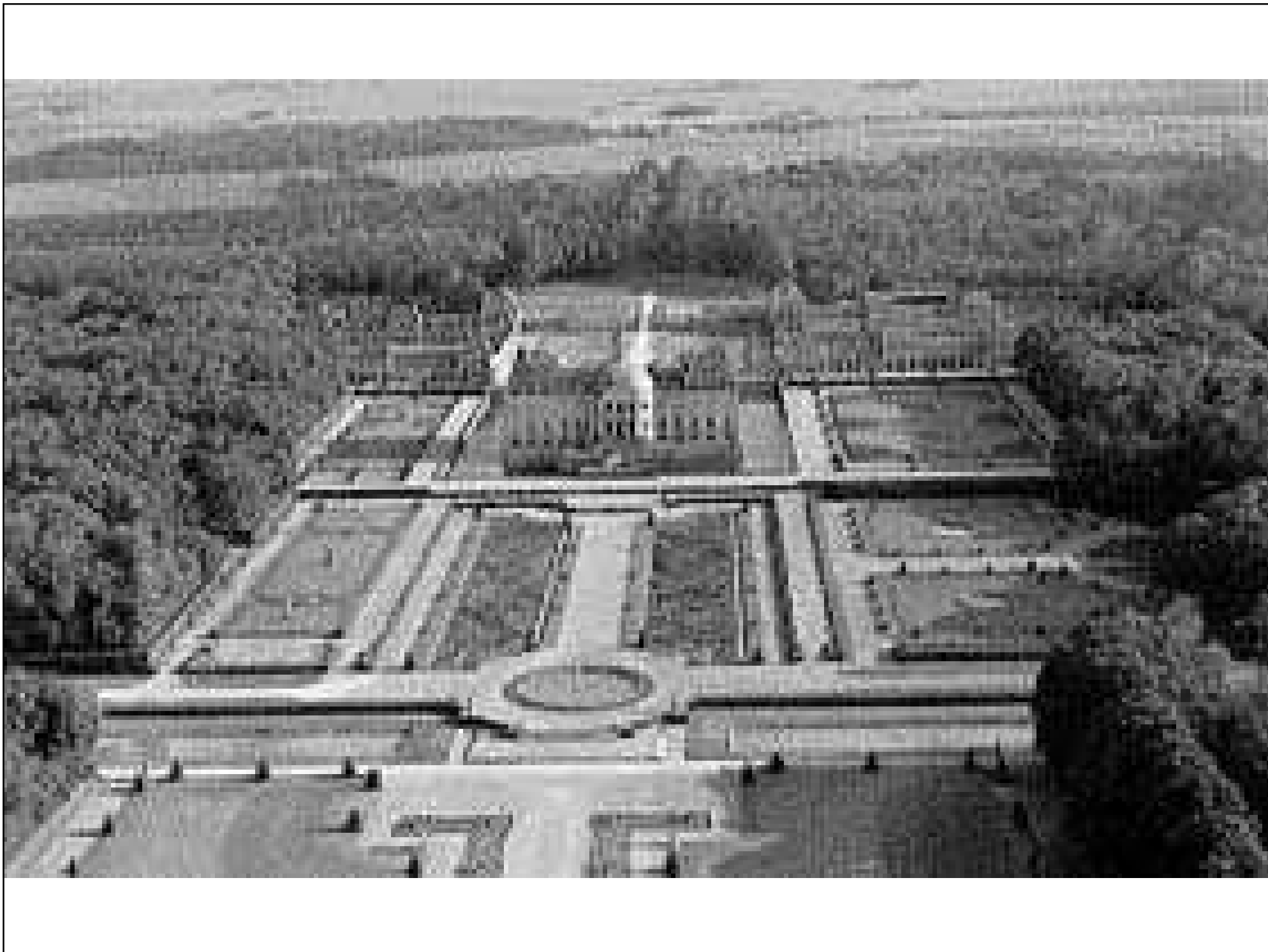
(**CR4**) A system is representing if and only if it possesses the capacity of seeing an object *a* under different – possibly new – aspects and it is capable of switching between the aspects

- **Clips** from dir: *Aspect*

- György Fehér: *Twilight*
- Chris Marker: *Sans Soleil*
- Margaret Duras: *India Song*
- Jacques Tati: *Playtime*
- Lars von Trier: *Medeia*
- Jan Svankmajer: *Leonardo' Diary*

6. A Particular Functional Case of Specificity: Aspect-change

- **Gardens of Vaux-le-Vicomte**
 - a continual system of deformations
 - the abuse of two axioms from Euclides:
 - Axiom 7 about spatial inclination
 - Axiom 9 about planes below eye-level
 - the creation of polimorphous space
 - the disharmony of perspectives
 - symbolic overdetermination







- **phenomenological considerations**

- the change is egocentric, which means that it is brought about by ego-motion

- seen aspects are grounded in the world that we are moving in

- no single aspect or perspective is privileged as the 'correct' one



- **the double-mode of specificity recognition**

- (i) **low-level and dorsally processed: object-specific substances or proper parts (e.g. odors)**

- (ii) **higher-level and ventrally processed: cognitive maps and other allocentric, i.e. indirect, forms of visual processing (e.g. facial recognition)**

(iii) keeping track by superimposition

- in order to recognize specificity the subject must both be embodied in the world and exercise his imaginative capacity
- to keep track of the same object only so far as we keep track of our changing relation to it