Anticipation and Identification:
A Comment on Lacan's "Mirror Stage"

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Abstract

In "The Mirror Stage", Lacan describes the process of identification in terms of a combination between "insufficiency" and "anticipation". The infant precipitates from his motoric and language impotence towards an anticipation of an identity, which is, in first instance, supported by the image. In recognising himself in the image, in identifying with the image, the infant anticipates a totality but at the meantime he alienates himself in the image. The image, as a rigid structure, will never adequately "re-present" the subject, but it will nevertheless serve to escape the situation of a "corps morcelé", of a non-unified, a non-totalized body. This paper analyses the relation between insufficiency and anticipation on the basis of Lacan's article. The broader aim is to embed this psychoanalytical viewpoint in a more general theory of complexly organized dynamical systems. In this approach, cohesive forms or structures, such as human subjects, agents, or psychic structures, are considered to take shape at various levels in a developmental history in which the mechanisms of identification and anticipation play a crucial role.

Keywords: Anticipation, identification, insufficiency, Imaginary-Symbolic-Real, complex dynamical systems.

1 Introduction

In 1949, Jacques Lacan presented a small paper at the International Congress of Psychoanalysis in Zürich, entitled "The mirror stage as formative of the function of the I as revealed in psychoanalytic experience" (Lacan, 1977). It was to be published in the *Ecrits* (i.e. "Le stade du miroir comme formateur de la fonction du *Je* telle qu'elle nous est révélée dans l'expérience psychanalytique", Lacan, 1966). In this paper, Lacan deals with imaginary identification, which refers to the way in which an infant succeeds in recognizing himself in the mirror image, in identifying the image in the mirror as his own image. On the basis of imaginary identification, the child manages to escape a state that Lacan characterizes as a "corps morcelé", a state he sees as non-unified and fragmented. To him, imaginary identification is an important step in the coming-into-being of the human subject.

The main reason to discuss this paper at an international conference on anticipatory systems, is that Lacan explicitly points to anticipation as a mechanism at work in identification. He states: "(…) *the mirror stage* is a drama whose internal thrust is precipitated from insufficiency to anticipation" (Lacan, 1977, p. 4, original italics).[1]

This paper presents an analysis of the interplay between anticipation and identification in human subjects on the basis of this Lacanian text. The more general aim is to understand how a human subject, an agent, a psychic structure, an ego, … gets shaped at various levels in a developmental history, and what role identification and anticipation play in that history. With regard to imaginary identification in particular, why did Lacan view identification as intimately connected to anticipation? What does it mean to precipitate oneself from insufficiency to anticipation? What can be meant by insufficiency and anticipation? In tackling these questions, the aim will not be to trace the philosophical ramifications of the text. Questions such as why Lacan was bothering about phenomenology and Gestalt at that moment, in what sense he was influenced by existential philosophy in using terms like insufficiency and alienation, will not be discussed here. These were surely crucial sources of influence for Lacan at that time, but the mirror stage was also a subject of interest in his daily psychoanalytical practice. As Lacan himself indicates in the title, he is studying the mirror stage "as it is revealed in the psychoanalytic experience". It is against this background that Lacan's text will be dealt with here. Moreover, as this approach of the human subject is considered to be in line with research on the development of cohesive biological structures, Lacan's viewpoint shall be transgressed in due course and confronted with other perspectives and current research interests from (i) anticipatory processes, as described in dynamic systems theory (Collier & Hooker, 1999; Thelen & Smith, 1995, Van de Vijver et al. (eds.), 1998; Chandler et al. (eds.)), and (ii) Freudian theory revisited in terms of control theory (Pribram, 1976).

2 Lacan's Viewpoint on Identification in "The Mirror Stage"

According to Lacan, imaginary identification takes place in humans at an age (about 6 months) at which many primates are superior in instrumental intelligence. But in opposition to most primates and certainly to other animals, the little human is able to recognize his image in the mirror; he is able to identify his image in the mirror as being *his* image.[2]

2.1 Identification as an act

A first idea Lacan confronts us with, is that this moment of recognition is an *act* on the part of the infant, an act that is to be distinguished from the behaviour of primates in

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[1] "(…) le *stade du miroir* est un drame dont la poussée interne se précipite de l'insuffisance à l'anticipation" (Lacan, 1966, p. 97).

[2] Lacan finds inspiration here in the works of Köhler, and more generally in Gestallt psychology, in which the process of recognition of the image is described as an *Aha-Erlebnis*.

front of the image. Whereas the latter are quickly disinterested once the image is mastered and found empty, the former engages in a series of jubilant gestures in which he experiences the play between the movements assumed in the image and the reflected environment. In other words, the infant engages in a series of bodily movements in which he continuously verifies and re-verifies the relation between the virtual complex in the mirror and the reality it reduplicates.

If Lacan calls this moment an act, it is because the subject is genuinely *changed* as a consequence of the identification with the image, a thing which, at first sight, is not the case in primates. In this sense, identification reveals a "libidinal dynamism" of the human being — i.e. a way of being bodily, sensorily driven in articulating interactive contacts with the surrounding world —, as well as an "ontological structure of the human world" (Lacan, 1977, p. 2).

2.2 Initial Helplessness and the Symbolic Matrix

Secondly, Lacan stresses that at the moment of imaginary identification, the little being is still immersed in motor incapacity and marked by a fundamental dependence on the fellow human being. He states: "This jubilant assumption of his specular image by the child at the *infans* stage, still sunk in his motor incapacity and nursing dependence, would seem to exhibit in an exemplary situation the symbolic matrix in which the *I* is precipitated in a primordial form, before it is objectified in the dialectic of identification with the other, and before language restores to it, in the universal, its function as a subject." (Lacan, 1977, p. 2, original italics).[3]

What is Lacan trying to say here?

2.2.1 Visual Versus Motor Control

The first thing to be noted is the motor incapacity of the infant. Lacan stresses the specific visual capacities that are at the infant's disposal at a moment of a quite specific motor incapacity: the infant doesn't walk upright and in this way his motor control is severely limited. This creates a very specific developmental context, radically different from most other animals. Of course, the idea of this initial helplessness is not original to Lacan — various authors have stressed it, in psychology or psychoanalysis as well as in biology. Proper to psychoanalytic thinking, however, is the idea that this initial impotence is in a sense a "highway" to sociality. Without helplessness, there just would not be the same need for the support of the other. Freud very clearly makes this point very early, in his *Project of a Scientific Psychology*, where he states that the initial helplessness of the infant is "the primal source of all *moral* motives" (Freud, 1950, p. 318, original italics).

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[3] "L'assomption jubilatoire de son image spéculaire par l'être encore plongé dans l'impuissance motrice et la dépendance du nourrissage qu'est le petit homme à ce stade *infans*, nous paraîtra dès lors manifester en une situation exemplaire la matrice symbolique où le *je* se précipite en une forme primordiale, avant qu'il ne s'objective dans la dialectique de l'identification à l'autre et que le langage ne lui restitue dans l'universel sa fonction de sujet" (Lacan, 1966, p. 94).

2.2.2 Precipitation

The second thing to be noted is that the *I*, as Lacan calls it, precipitates itself (or is precipitated as the English translation incorrectly states) in a primordial form. Let it be clear that the operation of precipitation is crucial in any type of identification: to precipitate oneself implies, at a level to be further specified, an internally initiated *movement*, however clumsy and primordial. Perhaps this is the core-question with regard to identification: why would infants time and again precipitate themselves into a state of being they have as yet no clue of? This process must be something quite robust, almost inevitable because, indeed, children time and again come to identify. Moreover, if the child is anticipating its future being by identifying with the image, it is certainly not doing so by developing a universal representation and deciding to consider his own being as a particular instance of it. As was shown elsewhere (see Blomme & Hoens, 2000; Van de Vijver, 1998, 2000a), and as Lacan describes in his article on "Logical time" (Lacan, 1966a), the dynamics at work in formation of the human subject are not to be understood in terms of instantiating universal categories..

2.2.3 Symbolic Matrix

The third noticeable thing is the use of the word "symbolic matrix". The term matrix can be interpreted here as a mould, on the basis of which copies can be made of various materials, a matrix as a kind of mother-form, a ready-made form in which the infant, jubilant but clumsy, is precipitated or precipitates himself in a primordial form. Today, in the terms of dynamic systems theory (Collier & Hooker, 1999; Collier, in press) we could say that the infant is developing, on the basis of an identificatory judgment, a primordial form of cohesion, that will normally be followed by another form of cohesion based on language.[4] Lacan is not suggesting that these two forms of cohesion, respectively in the imaginary and the symbolic order, follow each other as stages in a Piagetian fashion. He is making a logical distinction between the two, and only suggests a genetic perspective by referring to a developing infant, without subscribing to well-delineated stages. He is neither implying that both types of cohesion have a similar nature, nor that the one would be just more complex than the other. In these two kinds of processes, however, a mould needs to be presented to the child, a matrix, that Lacan rightly calls symbolic, because it is indicative of the social relations in which the child

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[4] According to John Collier, cohesion is "the closure of the causal relations among the dynamical parts of a dynamical particular that determine its resistance to external and internal fluctuations that might disrupt its integrity". Collier includes the requirement that "these relations be stronger on average within the closure than without. This determines a *cohesion profile* that gives the (probabilistic) conditions under which a thing will both retain and lose its integrity, determining its boundaries under a range of conditions. We thus describe cohesion as the "dividing glue" of dynamical entities. Cohesion is an equivalence relation that partitions a set of dynamical particulars into unified and distinct entities along the lines of John Perry's unity relation (Perry 1970)." (Collier, in press) For the identificatory judgment as a closing judgment, see Van de Vijver (2000).

is embedded. The matrix functions as an attracting force: it pulls the child into sociality.[5]

2.2.4 Two Facets of Identification: Thrust and Attraction

To be learned from all this is, minimally, that any answer to the question of identification should deal with at least two facets. Firstly, to identify appears to be a matter of (psychic) life or death: starting from the situation of helplessness and dependence, there really is not much choice for the infant: to become a human subject, with a socialized relation with the surrounding world, or not. In other words, identification relies on the initial and primordial capacities of the infant to move (to precipitate) and to be driven towards the other. Secondly, in order for identification to take place, an offer is to be made from the surrounding world, an offer in terms of what Lacan calls the symbolic matrix. *Identification always takes place against the background of these two conditions, reflecting the recursive relation between at least two organizational levels: a thrusting one out of helplessness, and an attracting one on the part of the surrounding world.* Identification inherently connects, as Lacan will say further on, the *Innenwelt* with the *Umwelt*. In the words of Jay Lemke (2000), identification implies the reorganization of the variety at the level below, as well as an organization *for* the higher level (the social level). In our case, the variety at the level below can be seen as the biological, organic body, the level above is the symbolic matrix offered by the human beings surrounding the infant. It is on the basis of the dynamical relations between these two levels continuously feeding back to each other, that a new organizational level is gradually getting shape, eventually taking the form of the human subject.[6]

2.3 Identification and (Alienating) Fiction

A third idea that Lacan presents here, is that the primordial form in which the infant precipitates himself, situates the Ego in a *fictional direction*: "(…) the important point is that this [primordial] form situates the agency of the Ego, before its social determination, in a fictional direction, which will always remain irreducible for the individual alone, or rather, which will only rejoin the coming-into-being of the subject

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[5] In the forties, Lacan sees language primarily as a mediating element which permits the subject to attain recognition from the other: language is an appeal to an interlocutor. In line with structuralist thinking, and in particular with the work of Cl. Lévi-Strauss, social relations are seen as fundamentally structured, guided by certain principles, by what Lacan calls the Law. Entering language, therefore means entering the social realm, and implies the submission to the Law (Evans, 1996, pp. 96-99).

[6] This idea could be formulated also in Freudian terms on the basis of the relation between primary and secondary processes, or between feedback and feedforward processes (Pribram & Gill, 1976), or in Peircean, triadic, terms of secondness that is "installed" in between firstness and thirdness, or, finally, in terms of dynamical processes taking place at lower levels being constrained by macro-structures. Within the latter frame, Moreno et al. speak of the self-maintenance of energetic flows, leading to a "work-constraint cycle" which is maintained "thanks to particular conditions imposed by macro-structures on the dynamics of a lower level" (Moreno et al., 1999, p. 52).

305

asymptotically, whatever be the success of the dialectical syntheses by which he must resolve as *I* his discordance with his own reality." (Lacan, 1977, p. 2).[7]

With his idea of fiction, we are at the core of Lacan's view on imaginary identification, and it will be important to see the consequences of it for any theory of cohesive dynamic structures. Applied to imaginary identification, the idea is that the total form of the body, by which the subject *anticipates* the maturation of his power, is only given to him as a *Gestalt*, in an exteriority that appears to him above all in a contrasting size that fixes it and in a symmetry that inverts it. "This *Gestalt* (...) symbolizes the mental permanence of the *I*, at the same time as it prefigures its alienating destination; it is still pregnant with the correspondences that unite the *I* with the statue in which man projects himself (...)" (Lacan, 1977, pp. 2-3).[8] And further: "the mirror-image would seem to be the threshold of the visible world, if we go by the mirror disposition that the *imago*[9] of *one's own body* presents in hallucinations or dreams, whether it concerns its individual features, or even its infirmities, or its object-projections; or if we observe the role of the mirror apparatus in the appearances of the *double*, in which psychical realities, however heterogeneous, are manifested." (Lacan, 1977, p. 3, italics original).[10]

In explaining these paragraphs, Lacan acknowledges that in the animal world there is a distinctive role played by the Gestalt, such as in mimetic phenomena, which pose the problem of the meaning of space for the living organism. As becomes clear in mimicry, there can be for certain animals a "spatial captation" acting as a necessary condition in processes of maturation. In the process of maturation of the gonad of the female pigeon, for instance, it is necessary that the pigeon should see another member of its species

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[7] "(...) le point important est que cette forme [primordiale] situe l'instance du *moi*, dès avant sa détermination sociale, dans une ligne de fiction, à jamais irréductible pour le seul individu, — ou plutôt, qui ne rejoindra qu'asymptotiquement le devenir du sujet, quel que soit le succès des synthèses dialectiques par quoi il doit résoudre en tant que je sa discordance d'avec sa propre réalité." (Lacan, 1966, p. 94). In this passage, as he does from early on his work, Lacan plays on the fact that the German term which Freud uses (*Ich*) can be translated into French by two words: *moi* (the usual term which French psychoanalysts use for Freud's *Ich*) and *je*. "(...) in his paper on the mirror stage, Lacan oscillates between the two terms. While it is difficult to discern any systematic distinction between the two terms in this paper, it is clear that they are not simply used interchangeably, and in 1956 he is still groping for a way to distinguish clearly between them (...). It was the publication of Jakobson's paper on shifters in 1957 that allowed Lacan to theorise the distinction more clearly: thus, in 1960, Lacan refers to the *je* as a SHIFTER, which designates but does not signify the subject of the enunciation (...). Most English translations make Lacan's usage clear by rendering *moi* as 'ego' and *je* as 'I'" (Evans, 1996, p. 50).

[8] "Cette *Gestalt* (...) symbolise la permanence mentale du *je* en même temps qu'elle préfigure sa destination aliénante; elle est grosse encore des correspondances qui unissent le *je* à la statue où l'homme se projette comme aux fantômes qui le dominent (...)" (Lacan, 1966, p. 95).

[9] The term imago was originally introduced in psychoanalysis by Jung in 1911, stressing the subjective determination of the image, including feelings as well as visual representations. Moreover, imagos are specifically images of other people (for Jung paternal, maternal and fraternal imagos). They act as stereotypes influencing the way the subject relates to other people (Evans, 1996, p. 84).

[10] "l'image spéculaire semble être le seuil du monde visible, si nous nous fions à la disposition en miroir que présente dans l'hallucination et dans le rêve l'*imago du corps propre*, qu'il s'agisse de ses traits individuels, voire de ses infirmités ou de ses projections objectales, ou si nous remarquons le rôle de l'appareil du miroir dans les apparitions du *double* où se manifestent des réalités psychiques, d'ailleurs hétérogènes" (Lacan, 1966, p. 95).

(homeomorphic identification). Meanwhile, the spatial captation is sufficient in itself so that "the desired effect may be obtained merely by placing the individual within reach of the field of reflection of a mirror" (Lacan, 1977, p. 3). So, clearly, a *Gestalt* is capable of formative effects in the animal world.

But what then is the difference between humans and other animals, if any, on the level of "spatial captation"? What does the mirror-stage reveal to us? To Lacan, it reveals "the effect in man of an organic insufficiency in his natural reality (…) this relation to nature is altered by a certain dehiscence at the heart of the organism, a primordial Discord betrayed by the signs of uneasiness and motor uncoordination of the neo-natal months. The objective notion of the anatomical incompleteness of the pyramidal system and likewise the presence of certain humoral residues of the maternal organism confirm the view I have formulated as the fact of a real *specific prematurity of birth* in man" (Lacan, 1977, p. 4).[11] So, again, it is because man is so premature at birth that he needs specific tools to establish a relation between himself, his body, and his reality, between *Innenwelt* and *Umwelt*. The mirror-stage can therefore be considered as a specific instance of the imago: the latter serves the function of building connections with the reality and does this in a stereotypic way, the former serves the same function but is not stereotypically linked to spatial, species-specific forms. It is, on the contrary, determined by quite "little reality", by an organic insufficiency of its natural reality.

At this point, Lacan finally comes to the sentence we started from: "the mirror stage is a drama whose internal thrust is precipitated from insufficiency to anticipation — and which manufactures for the subject, caught up in the lure of spatial identification, the succession of phantasies that extends from a fragmented body-image to a form of its totality that I shall call orthopaedic — and, lastly, to the assumption of the armour of an alienating identity, which will mark with its rigid structure the subject's entire mental development. Thus, to break out of the circle of the *Innenwelt* into the *Umwelt* generates the inexhaustible quadrature of the ego's verifications" (Lacan, 1977, p. 4).[12]

Lacan calls it a drama, because it introduces the infant in a world of alienation, a world in which he will be for ever searching, inexhaustibly, after the true, non-fictional image. One could think that, as at that moment the child is still fully, jubilantly, under the impression of the image, there is no alienation. Primary narcissism is the term to indicate that state of libidinal investment. But meanwhile, this state is the first step in a dynamics of oppositions: between the narcissistic libido and the sexual libido, between

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[11] "l'effet chez l'homme (…) d'une insuffisance organique de sa réalité naturelle (…) cette relation à la nature est altérée chez l'homme par une certaine déhiscence de l'organisme en son sein, par une Discorde primordiale que trahissent les signes de malaise et l'incoordination motrice des mois néonataux. La notion objective de l'inachèvement anatomique du système pyramidal comme de telles rémanences humorales de l'organisme maternel, confirme cette vue que nous formulons comme la donnée d'une véritable *prématuration spécifique de la naissance* chez l'homme" (Lacan, 1966, p. 96).

[12] "Le *stade du miroir* est un drame dont la poussée interne se précipite de l'insuffisance à l'anticipation — et qui pour le sujet, pris au leurre de l'identification spatiale, machine les fantasmes qui se succèdent d'une image morcelée d'un corps à une forme que nous appellerons orthopédique de sa totalité, — et à l'armure enfin assumée d'une identité aliénante, qui va marquer de sa structure rigide tout son développement mental. Ainsi la rupture du cercle de l'*Innenwelt* à l'*Umwelt* engendre-t-elle la quadrature inépuisable des récolements du *moi*" (Lacan, 1966, p. 97).

the function of the I and the relation to the other, between the I and the Unconscious, ... Hence, the mirror-stage is a decisive moment in the ontological structuration of the human world. As Lacan states: "It is this moment that decisively tips the whole of human knowledge into mediatization through the desire of the other, constitutes its objects in an abstract equivalence by the cooperation of others, and turns the I into that apparatus for which every instinctual truth constitutes a danger" (Lacan, 1977, p. 5).[13]

3 Psychoanalysis and Dynamical Systems Theory: Concluding Remarks

It has been shown that the dynamics of anticipation that are at work in the structuration of the subject are not a matter of building universal representations in which particular representations would come to fit. Whereas anticipation has traditionally been linked with (conscious) behaviour developed in function of a pre-established goal, and where the study of anticipatory systems has been focussing on the representational and abstract capacities that allow for such a goal-directed behaviour (cf. Rosen, 1985; Van de Vijver, 1998), it becomes clear in imaginary identification that anticipation is to be linked with certain types of dynamic behaviour between systems and environments, and more specifically with certain types of behaviour between humans and their fellow human beings. Anticipatory processes are not exquisite goal-directed processes in which the goals of the concerned parties are perfectly tuned. The goals may be recognizable *a posteriori* and *globally* as they are constructed in the process, but they are never fully driving the behaviour *a priori* and *locally*. So, as all anticipatory processes, identification is a matter of memory and abstraction, but above all, in the psychic realm, it is a matter of the gradual construction of the relation between a human being-in-becoming and a fellow human being. In other words, anticipation is here a matter of socialization. In the construction of this "intersubjective" relation, the little human throws itself forward in the direction of the other, goes from jubilation to idealization to misunderstanding and opposition. This constructive process of the human subject has been understood here as a process in which a new level of organization emerges *in between* two other levels: the bodily and the social level. As was shown elsewhere (Van de Vijver, 2000), the construction of a new level implies a closure of the elements of the level below, and hence, a change in the immediate accessibility of that level. Lacan's use of the term "alienation" can be understood along these lines.

But identificatory processes enable us to see still more particularities of anticipation that are, in our view, of importance for anticipation at large. It became clear, for instance, that anticipatory processes in humans are highly stratified. It appeared, moreover, that this stratification is to be related to the various sensitive "entrances" or "contact-points" a human being has with his surroundings. This article focussed on imaginary identification, in which the visual system was shown to be predominant in comparison to the motor system at that precise moment in development. However, in order to deal

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[13] "C'est ce moment qui décisivement fait basculer tout le savoir humain dans la médiatisation par le désir de l'autre, constitue ses objets dans une équivalence abstraite par la concurrence d'autrui, et fait du *je* cet appareil pour lequel toute poussée des instincts sera un danger" (Lacan, 1966, p. 98).

more fully with the construction of the subject, it is necessary to articulate identificatory processes starting from (i) the particular sensitive entrances the infant has at a certain moment of his development, (ii) their mutual connectedness at certain moments in development[14], as well as from (iii) the gradual construction and continuous change in this interconnectedness.

In conclusion, let us ask whether there is something to be retained from this psychoanalytic viewpoint for the studies on anticipation at large, and for anticipatory processes in biological systems in particular. Three, quite speculative, groups of questions come to mind.

3.1. Anticipation and Fiction

What about the idea that the *assumption of a totality* (be it on the basis of an image or on the basis of something else) indicates a direction of fiction? Does this imply that "totality does not exist, totality is always assumed", that totalities exist along the imaginary axis only? Totality is an assumption, in Lacan's sense a fiction. Actually, Kant was saying pretty much the same thing with regard to biological organisms in his third Critique: in as far as they are wholes, living systems cannot be known objectively, but we can do *as if* it are wholes. To Kant, we háve to make that assumption, otherwise we are totally unable to understand them and to communicate with them. Should the same reasoning be applied to the recent theories about cohesion? Is there an imaginary dimension in grasping any form of cohesion? Is it the case that circularity (the closure of the causal loops, as Collier has it) is also imaginary?

3.2 Identification in Living Systems

What about the role of *identification in biological systems*? We have seen the role of *Gestalt* for some processes of maturation, but what about the particular mechanisms at work in the organisational closure of biological systems? Can this process be understood in terms of identification? And in line with this idea: if there is room for identification in biological systems in general, is there something to be said about the role played by socialization? If biological structures are "made" in terms of attraction and thrust, what is the pole of attraction?

3.3 The role of lack

What is the role of *lack (insufficiency) in biological systems*? Can the initial helplessness that we have seen as characteristic for human beings be encountered in other forms in living organizations? According to the biosemiotic viewpoint, which is a Peircian, triadic, viewpoint, living systems are marked by a code duality, in which the

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[14] On the basis of processes of imitation, Gallagher and Meltzoff (1996) have investigated in this sense the relation between the visual system and the movements of the body. They conclude that there is an innate connectedness from birth and suggest a "supramodal perceptual system", to explain the fact that the new-born is capable of imitating facial expression only a couple of hours after birth.

nature of the code implies the impossibility to "code *for* everything". A particular code-duality creates a space within which evolution and history can take place. Precisely because it is based on exclusion, the code can create what Hoffmeyer calls semiotic freedom (Hoffmeyer, 1997). Robert Rosen arrived at very similar conclusions in characterizing the modelling relation. However, there is a second gap, a second lack, that comes to redouble the previous one, and that arises once we introduce the idea of system or of closure. The gap here refers to the impossibility of adequately describing the internal dynamics of living systems, and the inevitability to adopt an external, however partially totalizing, viewpoint to account for it. So, staying within the viewpoint of the organism, is it fruitful to consider its various organizational levels as mutually observing, describing and measuring devices, between which as many observational, descriptional and measuring gaps exist? The works of Koichiro Matsuno (2000) pretty much suggest this picture. If we adopt this stance, what will come to fill the gaps? For the biosemotician Hoffmeyer, empathy, identification and ethics seem to be the main answers here. How to articulate this in the realm of living systems and meanwhile escape uncritical forms of anthropomorphism? Will it be sufficient to state that "ethics is not about values that we opt for, or that are imposed on us from outside (...) it is about self-knowledge, i.e., the recognition of our ability to empathize as the very life-line that can help us overcome alienation and fear of death" (Hoffmeyer, 1996, p. 133)? Our viewpoint is that a general theory of identificatory processes is required to really answer these complex issues.

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