Sign Systems Studies 43(2/3), 2015, 249–268

Between emotion, imagination and cognition: Play as a hybrid neuro-evolutionary concept in bridging Saussure, Hegel and Alexander von Humboldt

Jui-Pi Chien

Institute of Foreign Languages and Literatures, National Taiwan University
No. 1, Sec. 4, Roosevelt Rd., Taipei 10617, Taiwan
e-mail: jpchien@ntu.edu.tw

Abstract. This study seeks to discover hidden links between Saussure's *Third Course of Lectures on General Linguistics*, Hegel's *Introductory Lectures on Aesthetics / Philosophy of Mind* and Alexander von Humboldt's *Cosmos*. To begin with, the notion of play is employed to examine the interplay between our emotion, imagination and cognition, and to examine how such a composite of faculties serves to unify conceptualizations of communication-modelling systems, philosophical hermeneutics and moral psychology in our times. At discovering a certain future-oriented and symbiotic scheme of time implied in these theories, the inquiry moves on to engage with certain perspectives on the evolution of our verbal and nonverbal capacities. Further, observations concerning the actual functioning of mirror neurons in humans are introduced to revise our understanding of the enactive power of nonverbal capacities such as feeling and imagining. The hypothesis made by neuropsychologists concerning the correlation between the mirror and sign systems reveals significant connections between Saussure, Hegel and Humboldt: our emotions and imagination are as schematic and extensive as our speech acts in teaming up with diverse beings and pushing for new solutions and deeper understandings. Finally, this study draws on implications of the empowered sign-cum-mirror system for revisiting certain controversial issues such as the emergence of language-ready brain and the urgency of overcoming eeriness in our linguistic and artistic world-making. It is suggested that we employ our capacities as a somatosensory system so as to on the one hand observe the changing coordination between our body and mind, and on the other, generate rewarding strategies for a greater success at dealing with intriguing patterns found in art, nature and culture.

Keywords: play, emotion, cognition, imagination, symbiosis, communication-modelling system, hermeneutics, aesthetics, neuropsychology, sign-cum-mirror system, somatosensory system

http://dx.doi.org/10.12697/SSS.2015.43.2-3.07

1. Introduction: Why should we play with art and nature?

This study draws on two charming endeavours to bridge the gap between philosophical and evolutionary aesthetics: (1) the German polymath Alexander von Humboldt's revised position concerning the usefulness of Hegel's aesthetics (Humboldt 2009; 2010); (2) the Dutch sociologist Johann Huizinga's innovative idea of defining an alternative history of aesthetics in light of the concept of play (Huizinga 1998). In the history of philosophical aesthetics, an essential moral issue is whether we should unify our perception of artwork with that of nature, and how we can possibly achieve such a union of our mental horizons (Hepburn 1966; Wollheim 1980; Margolis 2009). The presumed difference between Hegel and Humboldt – the former appears to have excluded nature from his inquiry while the latter regarded it as his major object of study – not only exemplifies the kernel issue, but also appears highly enlightening today when considered in the context of empirical brain research. Neuropsychologists who aspire to draw new insights from empirical data have reinterpreted the relationships between our capacities: (1) our perception and creation of the visual arts are not necessarily dependent on the neural pathway of using languages (Zaidel 2010); (2) our neural functions are observed as a flexible system that is adaptable to various situations (Damasio 1999; Kaag 2009). These new insights provide the framework within which our perception is seen as governed and enhanced by the interplay between our consciousness, emotion and cognition (Pessoa 2008). By introducing the concept of play into rediscovering our capacity of unifying art and nature, this study on the one hand illustrates the benefits of bridging binary oppositions, and on the other hand argues for the strengths of such perspectives as non-reductive dialectical reasoning and nonlinear symbiotic evolution.

1.1. Unification of communication-modelling system, philosophical hermeneutics and moral psychology

In terms of communication-modelling systems, the strength of introducing the concept of play into our inquiry is in recognizing a certain "emotional structure" that addressees develop while communicating with addressers. Juri Lotman actually put forward this idea in order to revise the ambivalence of emotive potential thought to exist in Roman Jakobson's communication scheme (Lotman 2011). By conceptualizing the emotive potential as a kind of play constantly experienced between addressers and addressees, Lotman revised some negative impressions associated with emotions: they are not just a source of redundancy or a hindrance to perfect communication, but rather serve to integrate and elaborate on certain thoughts that occur concurrently within addressees. Such mental work based on the condition of multiperspectivity in our brain is thought to enhance the bond between the two ends of communication.

Play functions not only to increase the amount of information already contained in the art the addressers have created and the addressees are enjoying, but also to change the addressees' mindsets (states of consciousness) in their processes of observing and interpreting. By revising the functioning of code on Jakobson's scheme as an emotive-cognitive composite that serves to increase information, Lotman argued that (1) some nonverbal and discrete entities (such as schematized images) are no less powerful than natural languages in shaping our understandings and modelling our sensations for the arts; (2) art systems are just like biological systems in the way that they both structure and store a huge amount of information as time evolves (Lotman, Uspensky 1978: 227; Lotman 2001: 203; Lotman 2011: 268). The kind of knowledge we gather from playful experiences opens up multiple yet competing truths – things that we would not be able to discover when applying rational and logical thinking.

While arguing for play as an essential spirit of our civilization, Huizinga (1998) recognized three types of humans – children, shamans and poets (artists) – who are quite capable of working out unique answers to problems by way of "pretending" to be serious with their imaginary objects. Successful players are believed to be operating on two levels: on the one hand, they are indulging in their own worlds of fancy while perfecting telling stories, performing rituals, or creating the arts, and on the other, they are communicating with their audiences by talking them into believing something imaginary such as the experience of encountering wolves in the forests or the pacification of the anger of gods. The audiences in such scenarios are more than willing to be tricked so as to gain something from such communication (Huizinga 1998: 23). Just as those extraordinary humans who entice their audiences into play scenarios, these audiences have to undo a bit of their rational thinking so that they can feel the twists and turns in every trick and restructure their mindsets in the meantime. The actual functioning of play actually enables addressees to acquire some profound knowledge: (1) the more capable they are to overcome vague feelings of fear, tension or anxiety, the greater the resulting sense of wellbeing; (2) the more sympathetic they feel about the addressers' situations, the deeper insights they will come up with into the latter's art.

Basing on the dialectical mental work of acquiring knowledge through "pretending" or "deceiving", Huizinga put forward the idea that we should rediscover the heuristic function of play, namely its strength in interdisciplinary inquiry, in the realm of aesthetics. He thought the rise of aesthetics towards the middle of the 18th century elucidates a critical turn in our way of perceiving art and nature. However, Huizinga was against following Friedrich Schiller's notion of 'play-instinct' (*Spieltrieb*) to unify our innate qualities of feeling and shaping – he rather emphasized our conscious and effective control of mental acts in acquiring sensations of beauty and freedom (Schiller 1982: 103, 105; Huizinga 1998: 168). The actual functioning of play lies in its forward-looking scheme of time which induces us to temporarily forget about our beliefs gathered in

the past while concentrating on gaining pleasure and happiness during a certain time span of playing here and now (Huizinga 1998: 7, 10, 201–202).

In the context of philosophical hermeneutics, the philosopher Hans-Georg Gadamer (who actually benefitted from Huizinga's concept of play) appears to represent a strand that focuses on our intellectual growth – he has been accused of having underestimated the functioning of our emotions (Roald 2007: 78–79). However, judged in terms of his own philosophical tradition, Gadamer's adoption of play gains its merits from three aspects: (1) he revised Kant's notion of the aesthetic attitude of disinterestedness: we are encouraged to be curious and rigorous while contemplating on art and nature; (2) he also corrected Heidegger's idea of a being which is deprived of "free choices": as choosy players, we always consider which clue (path) to pick up when interpreting details; (3) he put forward the idea that we can imagine both art and nature as events of being (*Seinsvorgängen*), as if they were human beings charged with vigour and vitality. It is thus natural to have dialogues with them and work on mutual benefits, wellbeing and solidarity (Gadamer, Ricœur 1982; Gadamer 1994).

Play is appreciated as an elegant and legitimate way of overcoming the gaps between beings. In the first place, art and nature are competent or informative if some parts of them already attracted our attention. We then start wondering about these attractive details with an eye to discovering some kind of meaning or surprise. In the long run, recognizing certain affinities with them, we gradually develop an enlarged picture about addressers and addressees. Considering the constant comings and goings staged between the two ends, some new revelations are expected to appear in each communication. Arguably, Gadamer failed to think about the functioning of emotions: (1) our impressions of art and nature gathered on the first encounter are actually already charged with certain emotions; (2) some new sensations are needed to start a new stage of inquiry; (3) certain feelings or affective reactions can be as stubborn as to stop us from making progress from one stage to another (Roald 2007: 105–106). In terms of both hermeneutics and neuropsychology, we definitely need to overcome some persistent feelings – deeply encoded in our body and mind – so as to fruitfully come up with revised understandings, and thus create the greatest harmony and solidarity between diverse beings.

The concept of play emerges as a master trope that serves to unify art and nature on the same horizons. From Lotman, Huizinga and Gadamer, we gather that this is a matter of our own survival: we need to develop some skills and modify our thoughts so as to invent solutions that may enhance our wellbeing here and now. When scholars in our times have promoted emotions as an independent area of study – not to be subsumed or depleted by our abstract reasoning – particularly in the field of moral and evolutionary psychology, they have also been looking for some kind of benefits or rewards that serve to justify our feelings (Greenspan 1998; Dissanayake 2007; Pessoa 2008). Imagination has been claimed as a kind of morally indispensible factor that helps

pursue such a line of inquiry. Moreover, with the conceptualization and application of propositional feeling, reasoning is somewhat transformed as our capacity of finding angles or perspectives to justify our imagined, objectless, yet diverse feelings (Greenspan 1998). It is argued that imagination enables us not only to survive practical and daily situations, but also to fully enjoy practising and experiencing the arts.

Following the trend of arguing for the equally important and interactive functional entities of emotion and reason, we discover once again that certain play-elements are at work. In our course of widening horizons so as to adjust one kind of feeling into the others and to gain some euphoria spiralling upwards, our mind actually favours deviating from reality, factual beliefs or judgments as a kind of reward or benefit. According to these ideas which value the profundity of emotional effects, our self-serving mental work guided by imagination elaborates on some kind of future-oriented justifications (Dissanayake 1995; Greenspan 1998; Thornhill 2003). Instead of looking back to identify some true causes (reasons) of feelings, we take our emotions as a point of departure to push for endless discoveries of new beings, stories and solutions. Therefore, in light of the aforementioned advantages of play, this study seeks to bridge the gap between Saussure, Hegel and Humboldt by considering some notions other than real nature. It relates their insights to recent surveys on two aspects: (1) the interplay between our visual perception and use of language in the course of unfolding and widening horizons; (2) the actual functioning of our emotions and imagination in teaming up with diverse beings.

1.2. Symbiosis of our capacities and the functioning of mirror neurons

Certain hypotheses concerning the evolution of human capacities may enable us to appreciate the benefits of introducing play into our inquiry. Some scientists who mainly follow Darwin believe that our ability for iconic representation is preceded by the emergence of language – our practices of art are deemed to have emerged late in the development of the *Homo* line (Verpooten, Nelissen 2010). It follows from this hypothesis that *Homo sapiens* started developing real art after they started speaking and imagining. Icons or symbols created for tribal identity or cohesion among pre-humans cannot be taken as real art (Zaidel 2010). Other scientists who adopt a nonlinear perspective rather define our intuitive reactions of feeling, imagining, memorizing and paying attention as a cognitive network. They believe that such a network already assisted pre-humans in developing some kinds of art and culture long before they started speaking – our verbal capacity was just a by-product in the process of developing sophisticated manual skills to share knowledge and to communicate (Donald 2001). In addition, this hypothesis considers the functioning of language as one of the play-elements that humans have

been applying in order to refine their thoughts while broadening their horizons to get along with people in other communities (Donald 2001: 253; Ellis 2011: 179).

Still other scientists wonder whether pre-humans had developed some kind of protolanguage on the basis of gestures and sounds they used in surviving their environments. They are also curious about the driving force that enabled *Homo sapiens* to become "language-ready" (Arbib 2012: 157–160). Nevertheless, such a hypothesis is divided between standpoints of biological and cultural evolution in providing a convincing story about the emergence of full-fledged languages. Even though psychologists and anthropologists are inclined to believe that culture has overridden biology – certain behaviours such as imitating, learning and using symbols among early humans may have assisted them in achieving a great leap in history – a measure of the cognitive and neuro-evolutionary benefits of such behaviours is under debate (Arbib 2012; D'Errico, Henshilwood 2011).

Mirror neurons have recently been claimed as the evidence that serves to unify our evolutionary, developmental and experiential processes within a certain time span of playing and imagining (Kaag 2009: 188). These neurons, which in the first place were found in monkeys' brain area for hand control, may play a significant role in governing the coordination of our somatosensory system such as feeling and knowing, hearing and speaking, watching and performing tasks with precision (Arbib 2012). Mirror neurons have also been recognized as the key to shortening the gap between infants and adults (such as the act of neonate imitation) and that between perceiving subjects and their environments (when arguing for a symbiotic composite of proprioceptive and ecological selves) (Gallagher 2006).

By introducing the idea of play into this inquiry, we aim to dissolve binary oppositions of any form while allowing diverse emotions and perceptions to evolve with our communications with art and nature. We seek to integrate biological and cultural viewpoints so as to widen our horizons and revise our biases against seemingly strange and unpleasant signs. Actually, Humboldt showed preference to the idea that we are not just passively receiving stimuli but actively transforming and revising our impressions while travelling between native lands and faraway locations. His approach on the one hand revitalizes nature as a living being or a companion to work with, and on the other, equates the actual functioning of our language with those of our emotion and imagination – these faculties are thought to be equally effective in shaping and remodelling our sensory experiences (Humboldt 2010a: 63–64, 355–356).

Recent studies of the functioning of the mirror system appear fairly compatible with Humboldt's insights concerning the cooperation between our capacities. The mirror system may help facilitate our foreseeing of possibilities or potential developments before we decide to take action. At the starting point of observing any kind of situation (either in art or in nature), patterns of our neural circuits of perceiving and imagining are not

very different, rather, they are almost blended – they collaborate to create perspectives for further applications (O'Connor, Aardema 2005; Gallagher 2006; Kaag 2009). After taking action to explore a situation (including watching, assimilating, discovering and interpreting sensory forms), we become more or less removed from the way we were in the first place. Our mind and behaviour will be reshaped or restructured by details found in this situation – both engaging intricacies and foreboding signs may trigger a remapping of neural patterns in our brain (Kaag 2009).

2. Saussure, Hegel and Humboldt bridged in the light of hermeneutics and sign-cum-mirror system

2.1. The beautiful and the sublime induced by the hermeneutic process

Systematic approaches were highly valued back in the 19th century: Hegel sought to unify our capacities for the arts such as feeling and imagining, while Humboldt aimed to dissolve the assumed opposition between emotion and intellect as manifested in our judgments of cultural artefacts (Hegel 1975; Humboldt 2010a, 2010b). Hegel characterized our appreciation of the beautiful, the sublime and the absolute as the outcome of overcoming contradictions and paradoxes latent in our sensory experiences. In the schema by which he illustrated our signifying practices (recollection; imagination; memory; pure thinking), he referred to our intelligence as the key to attaining understanding. We should be able to (1) intuit certain propositions that artists intend to communicate; (2) recognize certain rules that artists have applied in unifying details and ideas; (3) work out our own concrete thinking which sorts out some different trains of thoughts (Hegel 1975; 2010). Operating within this framework of communicating with the arts, we do not make distinctions between good and bad patterns, but focus on making connections and bridging gaps between them. Hegel's approach serves to induce several concurrent perspectives of interpreting, contextualizing and problematizing our sensory experiences without forcing us to settle on any one of them.

Humboldt's approach to art and nature appears no less dialectical and hermeneutical than Hegel's. The dynamic process of a perpetual to-and-fro between inquiring subjects and the objects of their attention may initially serve as a common ground between Hegel and Humboldt. Humboldt thought that we should always take advantage of the gaps appearing in the guises of time and space. By alternating between observing the exotic nature and looking into our own mind and milieu, we would be able to revise certain beliefs or biases and greatly widen our horizons; the more we look into and imagine about nature, the more pleasure and knowledge we will acquire concerning the hidden links between nature and culture (Humboldt 2010a). Specifically, Humboldt put forward an intriguing way of attaining the sublime:

> All the methods to which I have here alluded are fitted to enhance the love of the study of nature; it appears, indeed, to me, that if large panoramic buildings, containing a succession of such landscapes, belonging to different geographical latitudes and different zones of elevation, were erected in our cities, and, like our museums and galleries of paintings, thrown freely open to the people, it would be a powerful means of rendering the sublime grandeur of the creation more widely known and felt. The comprehension of a natural whole, the feeling of the unity and harmony of the Cosmos, will become at once more vivid and more generally diffused, with the multiplication of all modes of bringing the phenomena of nature generally before the contemplation of the eye and of the mind. (Humboldt 2010b: 91)

Instead of turning to our religious beliefs and admiring God and his creations, we should keenly juxtapose different plants and landscapes found in various parts of the world so as to contemplate our own inventions. The nature of the kind of illusion and euphoria that we are likely to gain from such a creative act is by all means dialectical: we are supposed to play with the greatest possible amount of sensory experiences that we have succeeded in putting together on the same horizons. Humboldt's insights concerning a new way of perceiving the sublime – free from any tinge of metaphysical speculations – appear quite compatible with Hegel's: they both considered the blurring of boundaries between our faculties as one of the vital traits of our scope widening and signifying. During their joint period of lecturing in Berlin (1820s-1830s), Hegel and Humboldt not only sketched some rich prospects for the study of our intelligence, but also managed to summarize some laws and principles that actually govern and give rise to our pleasure of getting along with art and nature.

2.2. Dynamic communications enacted by sign-cum-mirror system

Hegel and Humboldt discussed certain features of our intelligence and argued for a new way of conceiving the relationship between our verbal and nonverbal capacities – they both drew on the fact that we feel like bonding with art and nature before actually figuring out what we can say about them. We may gather an explicit picture concerning the interplay between our capacities by drawing a parallel to Ferdinand de Saussure's efforts of unifying all languages, i.e. his search for a certain rule that governs our changing yet creative consciousness (Saussure 2006; Arbib 2012: 222, 280–281). The speech circuit as illustrated in his third course of lectures (Figure 1) may serve as a heuristic model of play for further bridging the gap between Hegel and Humboldt. The scheme invites us to engage with how our perceptions of verbal and nonverbal sensory forms converge and diverge in the course of unfolding and widening horizons.

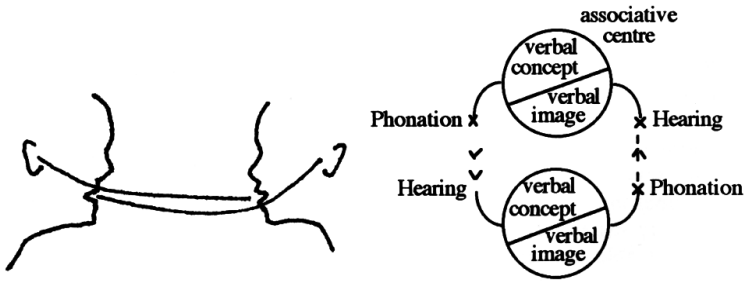

Figure 1. Saussure's communication scheme as illustrated in Emile Constantin's notebook (Saussure 1993: 67).

Saussure's model offers two ways of thinking about sign functions: (1) some kind of associative centre in our brain copes with listening, speaking and reacting; (2) both verbal and nonverbal messages can be governed by such a centre which more or less manifests a unique pattern of receiving, associating and making connections between sensory forms. Saussure (1993: 73a) put forward the paradox that speaking – though our actual means of verbal communication – has no essential connections with *la langue*, the crux that preserves laws and principles. On the contrary, images such as writings carry more recognizable and profound ties with our associative centre (Saussure 1993: 71a). The very fact that Saussure adopted "*image verbale*" (verbal image, later revised as *signifiant*, signifying) to theorize one aspect of the sign entity explains his hypothesis – speech sounds are supposed to be somewhat transformed as images so as to reach the kernel of our mind.

We can draw on two recent discoveries to verify such a harnessing and everlasting effect of images theorized by Saussure: (1) we are able to transform much of what we hear and what we read as part of our mental repertoire – the ability of encoding verbal images – in part because of the functioning of mirror neurons found in Broca's area (Arbib 2012); (2) we can still create and appreciate the visual arts when suffering from speech disorder or brain damage. It is argued that with such deficiencies our art-related intelligence relies on alternative neuronal pathways or connections to bypass regular speech circuits (Zaidel 2010).

Recast in the light of the actual functioning of mirror neurons, Saussure's scheme can be seen as a model of intelligence that generates not only words but also actions – our mind devises some "action sentences" by way of analysing, imitating, performing and revising others' movements (Arbib 2012: 189–190). In comparison with chimpanzees,

it takes a relatively shorter time and fewer trials for us to learn a new task. The major distinction in comparison with chimpanzees is the fact that our mirror neurons have evolved to deal on an abstract level, which offers potentials or meta-viewpoints for associating new skills (including both verbal and nonverbal performances) with old ones (Donald 2001: 340; Arbib 2012: 280–281). We can always foresee (imagine) how to do something (relating it to what we already acquired in our repertoire) and that we might put an end to it due to some value change in our mind (say, due to a shift between immediate and long-term interests).

Such a conceptualization (emphasizing potential links between mirror neurons and other parts of our brain) accentuates our level of consciousness – our getting along with other beings is entirely in our own hands (somewhat like the Heideggerian concept of *Zuhanden*). While communicating with beings in art, culture and nature, we are not just copying some chunks already found there, but rather seeking to create new patterns or rules that would foster cohesion and cooperation within a certain time span of playing. In addition, our intuition and perception of other beings may not be completely clear, pleasant and meaningful (satiated) in the first encounters – we might hesitate if we fail to spot some useful or familiar links to our repertoire (this said, Hegel appears to have done wisely having started his inquiry from our intuition and recollection). In order to become fully absorbed in teaming up with other beings, we need to rehearse in our imagination a procedure of revising and expanding our repertoire. Saussure's scheme enables us to imagine the kind of dynamics that we should practice while transforming our observations and perceptions of other beings into our own actions, i.e. some genuinely creative artwork.

Observations of the actual functioning of mirror system somehow put our emotions and intentions into question – some good or right feelings may not be the governing factor in our decision of entering into play scenarios with other beings. There are situations in which people decide to do nasty things not in their own interests but for certain social, cultural or environmental imperatives; humans and monkeys can be harshly beaten or insulted while being trained to master certain new skills. It has been discovered that our mirror neurons – when offered incomplete sensory input – are more likely to respond and to predict than making distinctions between actions and true thoughts: they are equally charged when we simply imagine doing something, watch others carrying it out, and perform it on our own (Gallagher 2006; Kaag 2009). Just as a Saussurean sign entity may be used to express the same idea with at least two or three diverse forms, so these various acts contribute to the same work out of a certain task.

The existence of a mirror system *per se* is unfounded among humans – it has to be coupled with a sign system so that we appear truly intelligent while dealing with diverse tasks. The sign-cum-mirror system overcomes the problem that the mirror system may in certain cases simply fire without afterthoughts. This composite system provides

us with a new perspective in arguing for our meaningful collaborations with diverse beings under all circumstances, including our imagination of nature while roaming or travelling (Kaag 2009: 193–194). We now take this as a guiding thread to further (1) bridge Hegel's and Humboldt's ideas of language and imagination; (2) engage with Humboldt's revised position concerning the usefulness of Hegel's aesthetics. We will observe how certain patterns – more or less emotionally charged if they appear familiar at all – cater to our dynamic imagination while we are exploring diverse situations.

2.3. Symbiosis of our imagination, language, illusion and wellbeing

Hegel's systematic inquiry into imagination appears insightful in three ways: (1) imagination is thought to be the true content of art that we cannot dispense with; (2) associative imagination enables us to play intelligently and passionately "even in the most unfortunate circumstances"; (3) productive imagination serves to unify our mental images (universal representations or concepts we already acquired) with actual or current images (new perceptions) while favouring the former as the guiding principle in introducing wider horizons and further unity (Hegel 1993: 51; 2010: 190–192). Seen from Hegel's perspective, the actual functioning of language is not all that different from the aforementioned schema he illustrated for the working of our imagination. Both speaking and imagining are thought to be a matter of generating signs in our consciousness with which we constantly negate some old ideas while pushing for new thoughts and propositions (Hegel 2010).

Hegel's unification of language and imagination on the same horizons of play appears quite enlightening. On the one hand, it sheds some light on the emergence of language: our capacity of speaking is thought to rise from "recursion", a kind of neural connectivity governing the imaginative play between mothers and their children (Ellis 2011: 163). On the other hand, Hegel's intriguing statements highlighting the dialectical co-existence of our mental and actual images (along with the powerful and demanding trait of the former) can be seen to have suggested our dilemma as binocular beings: we always struggle between believing and doubting some concrete objects or patterns that we actually see. It has been discovered that our mental imagery (mainly shaped by our imagination and memory) is able to form a "short-term trace" or memory that guides us to measure new experiences or perceptions in the future. Such memory is found to be different from iconic memory (which lasts only a few hundred milliseconds) and working memory (the content of which easily disappears if we fail to use it frequently) – it is much more efficient, organized and spontaneous (Pearson *et al.* 2008: 982, 985–986).

When dubbed in neuronal terms, Hegel's idea of universal representations corresponds to certain essential traits of mirror neurons. Our mental imagery not only governs our levels of consciousness, but also orients us towards aspects of art,

nature and culture (instead of imprisoning us in our own towers). It is argued that those recursive movements occurring in our short-term memory enable us to carry out sophisticated cognitive tasks such as planning and navigating. Meanwhile, we can create certain public or shared patterns and repertoires for people to communicate with and learn from each other (Donald 2001: 273; Pearson *et al.* 2008; Ellis 2011: 179–180). A certain sense of getting along with diverse beings is actually implied in Hegel's unified view of language and imagination.

How can we use all these merits in order to make the reading of Humboldt's *Cosmos* useful in our times? Although it is well known that while Charles Darwin was considerably indebted to Humboldt, certain evolution theorists and ecologists, e.g. Stephen Jay Gould have been quite dismissive of Humboldt's work: (1) they dismiss it as a kind of myth in ecology which entertains a fancy of unity and harmony in nature; (2) they think such an idea is simply a kind of belief or moral imperative naively expressed before Darwin's revolution (Gould 2000: 37–40; Paden 2012: 126–128). By making prominent certain dichotomies assumed to exist between Humboldt and Darwin (belief versus science; harmony versus rivalry in nature), these theorists read *Cosmos* so literally that they have ignored a neuro-psychological scheme that Humboldt aimed to achieve for our wellbeing.

Actually, Humboldt's contemplations are relevant to aesthetics: (1) those benefits of unity and harmony that he advocated are definitely in our mind – the outcome of our mental work – rather than things self-evident or crystal clear in nature; (2) he was sketching his own theory of human somatosensory system that serves to boost the growth of a new scientific approach which values the association between our sensory experiences in forming a perfect continuity with our objects of study (Humboldt 2010a). He put forward the idea that we equate human beings – irrespective of their historical periods, environments, languages and skin colours – on the same continuum made up by subtle distinctions in the ways they perceive and play with nature (Humboldt 2010a: 5–8, 20–21, 350–357). Therefore, it is somewhat of a disgrace to use Darwin to dismiss Humboldt's theory as an outdated philosophy. Humboldt's approach actually finds its compatible and illuminating contexts within hermeneutics, semiotics and the kind of aesthetics germane to current neuro-psychological approaches to our capacities.

The essential task for us is to refresh our reading of Humboldt's *Cosmos* and to explore how we can gain something extraordinary in our mind from observing nature – to discover if it is in any way similar to how we perceive intricate schemes contained in works of art. To begin with, we cannot deny the fact that when exploring wild nature or remote lands we tend to associate our new impressions with those of our own native environments (Humboldt 2010a: 8–9). This can be explained now that we have learned something about the functioning of sign-cum-mirror system – it induces us to spot familiar patterns for further associative networking in our brain. It should be noted

that such a voluntary act achieved when we are moving in nature is charged with an even higher level of consciousness than that in interpersonal communications.

It is so self-oriented and vigorous that Humboldt considers extensive travels as the most attractive way to collect data of our sensory experiences. On the one hand, these data reveal how we compare and contrast our homelands and certain exotic and faraway locations; on the other hand, they serve to excite our imagination so that we can go far beyond our temporal and geographical constraints. The enlarged and extended temporal and spatial schemes fabricated in our mind enable us to develop the illusion of being surrounded by certain distant landscapes – as if we were already there, acting and moving *in situ*. Such an illusion – more or less associated with a certain euphoric sense of freedom – can remain in the back of our mind for such a long time that we are likely to regain the same vision and euphoria years after actual travels while appreciating certain types of art such as poetry, landscape painting and gardening (Humboldt 2010b: 90–91).

Our illusion and happiness of being surrounded by nature may become so demanding and persistent – somewhat like Hegel's idea of universal representations – that it becomes our guiding principle in dealing with the arts. Without the constraint of our factual and religious beliefs, we can truly appreciate our sensory experiences as a spontaneous overflowing of scientific data which to a certain extent reveal the life-giving principle in art, nature and culture: certain ways of combining and arranging sensory forms actually strengthen the pleasure and excitement we gather from our illusions. This is the kernel of Humboldt's aesthetics on the basis of which he sorted out some intricate ties between our emotion, imagination and cognition. In addition, Humboldt drew on a certain sense of linguistic communication between nature and our mind: (1) remote and exotic nature is actually "speaking" to us (addressing our attention) whether we are there or simply appreciate its representations; (2) we respond to her or certain skilful depictions by developing illusions in our mind (Humboldt 2010a: 7–8).

By imagining a dynamic process of investing in the two ends of communication, Humboldt not only revitalized nature as a living being (no more a naturalist's artefact to be named and categorized), but also equated the actual functioning of our language with those of our emotion and imagination – these capacities are all equally powerful in shaping our sensory experiences for the growth of illusion and euphoria (Humboldt 2010a: 355). In addition to reading his brother Wilhelm von Humboldt's surveys on languages, Humboldt actually profited from reading Hegel in transforming our language faculty as a sensual and imaginative entity that functions to develop some kind of healthy illusion. Instead of dismissing Hegel's and nature philosophers' work as metaphysics deprived of experiences and breadth of vision ("narrower than scholasticism of the Middle Ages", Pinkard 2000: 610) as he would in the 1820s, Humboldt in the 1840s decided to adopt some Hegel as part of his writing scheme of *Cosmos* (Humboldt

2009: 67–68). By further introducing the notion of "translation" into our potential communications with nature – an idea borrowed from Hegel – Humboldt conceived of scientific inquiry as a way of unifying nature, our emotions and understandings as a compact whole, just like how our mind constantly creates "secret and indissoluble links" to integrate diverse thoughts (Humboldt 2010a: 63–64).

Hegel's and Humboldt's aesthetics reveal certain lovely paradoxes in our creative consciousness. First, we definitely need to draw on the past (our memory and mental imagery) so as to push for new ideas in the future. Humboldt (2010a: 356) in his *Cosmos* drew on the story of a child travelling between home and nature to prove this kind of common humanity ("a beautiful and touching instinct" in his words) – the fact that we are not completely attached to the present but constantly move back and forth between "the unforgotten past" and "the unknown future". Hegel also emphasized this kind of mental movement: in transcending from the sensory to the absolute, from a vague to a profound state of intelligent thinking, we always carry with us the materiality of what we have experienced in the past (Hegel 2010: 184). Second, we have a high demand for illusions in order to gain some confidence and happiness. Even though we are biologically attuned to geometrical and symmetrical shapes (as argued by the philosopher of ecology Ernst Hæckel and the art historian Ernst Gombrich), we also need something asymmetrical and impressionistic (such as mysterious and exotic landscapes, delicate combinations and juxtapositions of shapes and colours) to satisfy our fancy and imagination.

These two paradoxes are thought to be beneficial to our creative activities in the way of activating our short-term memory. In the course of teaming up with other beings, these demands along with certain skills we have acquired enable us to carry out some kind of recurring contextualization and revisions with our body and mind. These constant comings and goings – each time our mind is ablaze with a new perspective or renewed attention to details – are fundamental to the transformation of our emotive-cognitive composites.

3. Conclusion: Sign-cum-mirror system considered as a medium of bridging the gap between art and nature

While advocating our abilities of observing and experiencing rather than metaphysical speculations as a new approach to art and nature, Hegel and Humboldt invited us to contemplate the enactive power of our emotions. It appears that emotions (1) enable us to imagine something more than actual appearances; (2) may revise our thoughts as efficiently as the speech acts fired in our mirror system. According to Humboldt, our emotions and languages serve to translate or model the outer world as part of our inner

world: they both can be construed as constituents of the dynamic imitation-perception-action cycle deriving from our sign-cum-mirror system (Figure 1). Broadened and contextualized in the scheme of such a system, the actual functioning of our emotions regains certain theoretically prominent prospects.

Instead of dividing emotions into binary oppositions (we may judge certain sensations to be right or wrong, decent or indecent, due to our religious beliefs or moral principles), we now appreciate them as a continuously wide range of varieties that are bridgeable and negotiable if we care to create neural links. In this sense, emotions are just like our actions or behaviours – all highly charged with the goal to increase euphoria and new understandings by overcoming deep-rooted biases and feelings of fear, anxiety or eeriness. It is observed that we can actually achieve such an ideal because of the proximity and dynamic links between hypothalamus, amygdala and hippocampus in our brain. On the one hand, the hippocampus stores our memory as episodes (including our deepest fear and anxiety) and functions to remind us how we should react and behave on the first encounters with other beings. On the other hand, the amygdala, which governs our primal feelings and sensory experiences, is surrounded by the temporal lobe and is able to form extensive links with our cortices (Pessoa 2008). It is argued that these incessant links between our (prefrontal) cortex and amygdala serve not only to modify the reactions of our hippocampus, but also to nourish our hypothalamus that always seeks pleasure and rewards from our actions. Such dynamism is observed to have refined and enriched our emotions and cognitions just as much as the expanding and layering of our cortices (Arbib 2012: 99–101).

Seen in the context of neural functioning, the sign-cum-mirror system enables us to retrieve, select, enhance or inhibit certain feelings and memories for the best of our performances here and now (Donald 2001: 191; Panksepp 2012). Such a flexible system on the one hand revises the standpoint that specific structures in our brain govern our capacities (people can still recall things after a complete destruction of their hippocampus), and on the other, induces us to imagine our perception-action cycle as some kind of architectonic planning. Before applying certain means to draft a plan, we usually have some rough ideas about the items that we want to include. While actually drafting, we can come up with several possible ways of combining these items together to fit in with a certain goal or agenda. We then compare these plans, wondering about and estimating the economic and aesthetic values of each plan. We always choose the one that appears the most attractive, and then work on cutting and trimming, refining and enlarging certain features that best characterize the kind of art and culture we want to create. We can actually condense the whole procedure, depending on how learned and sophisticated we are as a planner, organizer or manager. If we are already experienced and skilful, we may be able to envision spontaneously an ideal plan without having to start from scratch.

We may also acquire some new skills or abilities in the process of actual planning because our capacities – rather than remaining disconnected between specific brain areas – are all structured and interconnected between layers of cortices. Even though our primary and sensory cortex is inbuilt with feelings of fear and eeriness that enable us to escape life-threatening situations, our ever-expanding secondary and tertiary cortices which encourage learning, imagining and planning work to contain these primal feelings (top-down regulations) when we enter play scenarios in nature and culture. The other way round, emotions gathered from our play experiences may change the way we perceive art, nature and culture devised by our secondary and tertiary cortices (bottom-up evolutionary control; Panksepp 1998, 2012).

By adopting the Saussurean approach to imagine our emotions and cognitions as composites (like chemical compounds charged with valencies), we can avoid being trapped in a certain causal reasoning – wondering about which comes first and which is more essential. Instead, we choose to be flexible about their causal links so as to observe their qualitative changes in as many diverse situations as possible: (1) a certain concept, knowledge or culture is already implied in our spontaneous affective reaction, i.e. the emergence of the first sign entity; (2) any form of cognition, understanding or meaning that derives from our neural processing of the sign is more or less associated with emotions; (3) the sign entity is so changing – feelings, emotions and cognitions work to modify one another – that we always come up with fresh or revised understandings.

When considered and unified in the light of neural complexities, Saussure, Hegel and Humboldt together appear fairly powerful in arguing for the urgency of overcoming eeriness on our numerous paths towards linguistic and artistic world making. We cannot dispense with the fact that ambiguities or foreboding signs – when spotted through our seeing and hearing – actually instigate a rigorous play drive, cognitive or high-level processing in our brain (Panksepp 1998: 289–290; Lenzi *et al*. 2008). Such a pattern of neural activity enables us to reflect on the advantages of using the sign-cum-mirror system to engage with the debate on language-ready brain. Instead of simply inhibiting feelings of fear and anxiety while we are travelling or socializing, our secondary and tertiary cortices always devise changing yet intriguing strategies so that we can cope with uncertainties and unpredictability. Both nature and culture can be seen in this light as part of our inner biological conditioning that evolves to achieve greater success and higher adaptability in diverse situations.

Just like icons or symbols created by early humans, the invention of *la langue* can be appreciated as one of the strategies that our mammalian managerial brain has devised and applied (Donald 2001; D'Errico, Henshilwood 2011). Such an expanded viewpoint encourages multidisciplinary inquiries into the conditions of linguistic and artistic world making. On the one hand, we should consider various demands of our play drive inclusive of imitating beings we are getting along with, devising strategies to collaborate with or to get away from them, and gaining happiness, knowledge and confidence after

actual communications. On the other hand, all these demands may work to modify our somatosensory system so as to improve our performances such as a revision of our oral, facial and manual coordination (Arbib 2012: 240–241).

Our sign-cum-mirror system so to say has not the least interest in identifying an absolute origin or a linear development of our faculties and capacities – it rather seeks to insert new data or information into our body and mind (Donald 2001: 267–268; Thornhill 2003; Lotman 2011). Empowered by such newly generated information, we can go beyond our cognitive constraints of period styles and artists' biographical details while revisiting art history. By taking advantage of the scheme of planning, playing and inventing, we seek to enlarge some harmony, euphoria and illumination we may gather from selecting, remapping and realigning details appearing in works by different artists. The emotive-cognitive appeals in this trade may entice us to constantly revise some old pathways on our numerous encounters with art and nature.[1]

References

Arbib, Michael A. 2012. *How the Brain Got Language: The Mirror System Hypothesis*. Oxford: Oxford University Press.

Damasio, Antonio 1999. *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt Brace.

D'Errico, Francesco; Henshilwood, Christopher S. 2011. The origin of symbolically mediated behaviour: From antagonistic scenarios to a unified research strategy. In: Henshilwood, Christopher S.; D'Errico, Francesco (eds.), *Homo Symbolicus: The Dawn of Language, Imagination and Spirituality*. Amsterdam: John Benjamins, 49–73.

Dissanayake, Ellen 1995. *Homo Aestheticus*. Seattle, London: University of Washington Press.

– 2007. What art is and what art does: An overview of contemporary evolutionary hypotheses. In: Martindale, Colin; Locher, Paul; Petrov, Vladimir M. (eds.), *Evolutionary and Neurocognitive Approaches to Aesthetics, Creativity and the Arts*. Amityville: Baywood, 1–14.

Donald, Merlin 2001. *A Mind So Rare: The Evolution of Human Consciousness*. New York, London: Norton.

Ellis, George F. R. 2011. Biology and mechanisms related to the dawn of language. In: Henshilwood, Christopher S.; D'Errico, Francesco (eds.), *Homo Symbolicus: The Dawn of Language, Imagination and Spirituality*. Amsterdam: John Benjamins, 163–183.

[1] The author is indebted to Elisa Garrido (Centre of Human and Social Sciences, Madrid) for her June 2012 presentation on Humboldt's travels and book writing, given at the Linnean Society in London; two colleagues Michael Ranta (Centre for Languages and Literatures, Lund University) and Henry Bacon (Department of Philosophy, History, Culture and Art Studies, University of Helsinki) and the two anonymous reviewers for their encouraging and generous comments on earlier drafts of the paper. The first reviewer enabled the author to strengthen the concluding section, while the second reviewer suggested emphasizing the coining of the novel term 'sign-cum-mirror system' in Section 2.2.

Gadamer, Hans-Georg. 1994[1960]. *Truth and Method*. [2nd revised edition.] New York: Continuum.

Gadamer, Hans-Georg; Ricœur, Paul. 1982. The conflict of interpretations. In: Bruzina, Ronald; Wilshire, Bruce (eds.), *Phenomenology, Dialogues and Bridges*. Albany: State University of New York Press, 299–322.

Gallagher, Shaun 2006. The earliest senses of self and others. The interactive practice of mind. In: *How the Body Shapes the Mind.* New York: Oxford University Press, 65–85; 206–248.

Gould, Stephen Jay 2000. Church, Humboldt, and Darwin: The tension and harmony of art and science. In: Beezley, William H.; Curcio-Nagy, Linda A. (eds.), *Latin American Popular Culture: An Introduction*. Wilmington: Scholarly Resources, 27–42.

Greenspan, Patricia 1988. *Emotions and Reasons: An Inquiry into Emotional Justification*. New York, London: Routledge.

Hegel, Georg Wilhelm Friedrich 1975. *Aesthetics: Lectures on Fine Art*. [Knox, T. M., trans.] Oxford: Clarendon Press.

– 2010[2007, 1817]. *Philosophy of Mind*. [Wallace, William; Miller, A. V., trans.; Inwood, Michael, ed., intr.] Oxford, New York: Oxford University Press.

Hepburn, Ronald W. 1966. Contemporary aesthetics and the neglect of natural beauty. In: Williams, Bernard; Montefiore, Alan (eds.), *British Analytical Philosophy*. London: Routledge & Kegan Paul, 285–343.

Huizinga, Johann.1998[1949]. *Homo Ludens: A Study of the Play-Element in Culture*. London: Routledge & Kegan Paul.

Humboldt, Alexander von 2009. *Letters of Alexander von Humboldt: Written between the Years 1827 and 1858, to Varnhagen von Ense; Together with Extracts from Varnhagen's Diaries*. Cambridge: Cambridge University Press.

– 2010a. *Cosmos: Sketch of a Physical Description of the Universe. Vol. 1.* Cambridge: Cambridge University Press.

– 2010b. *Cosmos: Sketch of a Physical Description of the Universe. Vol. 2.* Cambridge: Cambridge University Press.

Kaag, John 2009. The neurological dynamics of the imagination. *Phenomenology and Cognitive Sciences* 8: 183–204.

Lenzi, Delia; Trentini, C.; Pantano, P.; Macaluso, E.; Iacoboni, M.; Lenzi, G. L.; Ammaniti, M. 2009. Neural basis of maternal communication and emotional expression processing during infant preverbal stage. *Cerebral Cortex* 19(5): 1124–1133.

Lotman, Juri 2001. *Universe of the Mind: A Semiotic Study of Culture.* [Shukman, Ann, trans.] London, New York: I. B. Tauris.

– 2011. The place of art among other modelling systems. *Sign Systems Studies* 39(2/4): 249–270.

Lotman, Juri; Uspensky, Boris 1978. On the semiotic mechanism of culture. *New Literary History* 4(2): 211–32.

Margolis, Joseph 2009. *The Arts and the Definition of the Human: Toward A Philosophical Anthropology*. Stanford: Stanford University Press.

O'Connor, Kieron P.; Aardema, Frederick 2005. The imagination: Cognitive, pre-cognitive, and meta-cognitive aspects. *Consciousness and Cognition* 14(2): 233–256.

Paden, Roger; Harmon, Laurlyn K; Milling, Charles R. 2012. Ecology, evolution, and aesthetics: Towards an evolutionary aesthetics of nature. *British Journal of Aesthetics* 52(2): 123–139.

Panksepp, Jaak 1998. Rough-and-tumble play. The brain sources of joy. In: *Affective Neuroscience: The Foundations of Human and Animal Emotions*. New York: Oxford University Press, 280–299.

– 2012. What is an emotional feeling? Lessons about affective origins from cross-species neuroscience. *Motivation and Emotion* 36: 4–15.
Pearson, Joel; Clifford, Collin W. G; Tong, Frank 2008. The functional impact of mental imagery on conscious perception. *Current Biology* 18: 982–986.
Pessoa, Luiz 2008. On the relationship between emotion and cognition. *Nature Reviews Neuroscience* 9: 148–158.
Pinkard, Terry 2000. *Hegel: A Biography*. Cambridge, New York: Cambridge University Press.
Roald, Tone 2007. *Cognition in Emotion: An Investigation through Experiences with Art*. Amsterdam, New York: Rodopi.
Saussure, Ferdinand de 1993. *Troisième cours de linguistique générale (1910–1911) d'après les cahiers d'Émile Constantin / Saussure's third course of lectures on general linguistics (1910–1911) from the notebooks of Émile Constantin*, [Harris, Roy, trans; Komatsu, Eisuke, ed.] Oxford: Pergamon.
– 2006. *Writings in General Linguistics*. Oxford, New York: Oxford University Press.
Schiller, Friedrich 1982[1967].*On the Aesthetic Education of Man in A Series of Letters*. [Wilkinson, Elizabeth Mary; Willoughby, Leonard Ashley, trans., ed.] Oxford: Clarendon Press.
Thornhill, Randy 2003. Darwinian aesthetics informs traditional aesthetics. In: Voland, Eckart; Grammer, Karl (eds.), *Evolutionary Aesthetics*. Berlin, Heidelberg: Springer, 9–35.
Verpooten, Jan; Nelissen, Mark 2010. Sensory exploitation and cultural transmission: The late emergence of iconic representations in human evolution. *Theory in Biosciences* 129(2–3): 211–221.
Wollheim, Richard 1980. Art and evaluation. In: *Art and Its Objects. With Six Supplementary Essays*. Cambridge, New York: Cambridge University Press, 227–240.
Zaidel, Dahlia W. 2010. Art and brain: Insights from neuropsychology, biology and evolution. *Journal of Anatomy* 216: 177–183.

Между эмоцией, воображением и когницией: игра как гибридное нейроэволюционное понятие, объединяющее Соссюра, Гегеля и Александра фон Гумбольдта

В настоящей статье проводится исследование скрытых связей между «Курсом общей лингвистики» Соссюра, работами Гегеля «Лекции по эстетике» и «Феноменология духа», а также «Космосом» Александра фон Гумбольдта. Концепт игры дает возможность исследовать связи между эмоциями, воображением и когницией и понять, каким образом эти способности в совокупности объединяют в настоящее время концептулизацию моделирующих систем, философской герменевтики и психологии морали. Автор статьи находит в этих теориях определенную симбиотическую схему, направленную в будущее, затем рассматривает разные точки зрения на эволюцию наших (не)вербальных способностей. Далее приводятся соображения о работе зеркальных нейронов, чтобы разъяснить понимание таких невербальных способностей, как чувствование и воображение. Предлагаемая нейропсихологами гипотеза о корреляции между зеркальной системой и знаковой системой указывает на некоторые существенные точки соприкосновения между Соссюром, Гегелем и Гумбольдтом. Наши эмоции и воображение такие же схематичные и охватывающие, как и наши речевые акты. Автор вводит имплицитную знаково-зеркальную систему, чтобы разъяснить некторые трудные вопросы, как, например, возникновение

мозга с задатками языка/готовностью к языку и потребность преодолеть остранение в нашем языковом и художественном творении мира. Предлагается гипотеза, что мы применяем свои способности в качестве соматосенсорной системы, чтобы следить, с одной стороны, за изменяющейся координацией между телом и духом, а с другой – создавать более результативные стратегии для обработки интригующих упорядоченностей в искусстве, природе и культуре.

Emotsiooni, kujutlusvõime ja kognitsiooni vahel: mäng kui hübriidne neuroevolutsiooniline mõiste ühendamaks Saussure'i, Hegelit ja Alexander von Humboldtit

Käesolevas uurimuses püütakse avastada varjatud ühenduslülisid Saussure'i "Kolmanda üldkeeleteaduse kursuse", Hegeli teoste "Sissejuhatavad loengud esteetikasse" ja "Vaimufilosoofia" ning Alexander von Humboldti "Kosmose" vahel. Kõigepealt rakendatakse mängu mõistet, uurimaks meie emotsioonide, kujutlusvõime ja kognitsiooni vastastiktoimet ning vaatlemaks, kuidas sellised võimed ühendatuna nüüdisajal liidavad kommunikatsiooni modelleerivate süsteemide, filosoofilise hermeneutika ning moraalipsühholoogia kontseptualiseerimist. Avastanud neis teooriates peituva teatava tulevikule suunitletud ja sümbiootilise skeemi, liigutakse uurimuses edasi vaatlema teatud vaatenurki meie verbaalsete ja mitteverbaalsete võimete evolutsioonile. Edasi tehakse tähelepanekuid inimeste peegelneuronite tegeliku toimimise kohta, et parandada meie arusaama selliste mitteverbaalsete võimekuste mõistmist, nagu seda on tundmine ja ettekujutamine. Neuropsühholoogide välja pakutud hüpotees peegelsüsteemi ja märgisüsteemi korrelatsiooni kohta osutab teatavatele olulistele ühenduspunktidele Saussure'i, Hegeli ja Humboldti vahel. Meie emotsioonid ning kujutlusvõime on sama skemaatilised ja laiaulatuslikud kui meie kõneaktid, kui need ühendavad jõud erinevate olenditega ning üritavad jõuda uute lahendusteni ning sügavamale mõistmisele. Lõpuks lähtub käesolev uurimus implitsiitsest võimendatud märgi-ja-peegelsüsteemist, et vaadata üle mõningaid vastuolulisi küsimusi, nagu näiteks keelevalmidusega aju tekkimine ning pakiline vajadus saada üle kummastavusest meie keelelises ja kunstilises maailmaloomes. Tehakse oletus, et me rakendame oma võimeid somatosensoorse süsteemina, et ühelt poolt jälgida muutuvat koordinatsiooni oma keha ja vaimu vahel ning teisalt tekitada tulemuslikke strateegiaid, mis võimaldavad edukamalt tegelda kunstis, looduses ja kultuuris esinevate intrigeerivate korrapärasustega.