

Heymann Steinthal

A psychophysics of Linguistic Forms*

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Abstract: Though refuting all dependence of grammar on logic, Steinthal does not deny the *sprachliche Verkörperung* or *Verleiblichung*, that is, the linguistic incorporation or embodiment of the general forms of thought and intuition (§ 1). The dynamics of mental representations (§ 2) lead to the «threshold» of language, where unconscious processes operate: motor simulation (§ 3), apperception (§ 4), and the synergy of latent and active representations and competences (§ 5). Steinthal's stress on the role of motor representations and his theory of cognitive unconscious are a turning point in the tradition of linguistic naturalism (§ 6).

Keywords: apperception, cognitive unconscious, logics and grammar, motor representations, naturalism, Steinthal.

1. *A physiology of forms*

There are problems that have accompanied Western language philosophy throughout its history. Among these is the dependence of grammatical categories on the categories of thought. Whether founded on Aristotelian or Kantian logic, or inspired by an empirical-genetic view of the cognitive powers, grammatical theories have always shared the presupposition that the morphosyntactic structures of languages depend to some extent on their functional correspondence with the structure and modes of operation of the human mind.

Heymann Steinthal makes no exception. He rejects any domin-

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ion whatsoever of logic over languages. Yet, he does not deny a correspondence between mental and linguistic forms. He even speaks of a *sprachliche Verkörperung* or *Verleiblichung*, an incorporation or embodiment of the general forms of thought and intuition – space, time, substance, quality, etc. – into language (Steinthal, 1881: 45). In his opinion, the grammar of languages cannot be reduced to the categories of logic, nor words to concepts, or propositions to judgments. Yet, he does not exclude a parallelism of some sort between grammatical, logical and metaphysical forms, a genetic unity, for instance, between the grammatical category of the nominative, the logical category of the subject, and the metaphysical category of the thing or substance, or between verb, predicate and accident, and so on. Every linguistic act entails an unconscious analysis. Every linguistic expression implies some kind of conceptualization. «Even when the content of an utterance is nothing but a basic perception – the snow is white – the intuitive content is being analyzed according to conceptual categories» (ivi: 108).

Thus, logical and metaphysical categories are to be considered in some way *a priori* with respect to language. But they are, in turn, the result of development processes. They have an *a posteriori* existence in relation to those processes and the laws that govern them. The contradiction is only apparent. The *a priori* is conceived by Steinthal in a pre-Kantian fashion (or rather *anti-Kantian* fashion: Herder had used this acceptance against Kant in his *Metacritique of the Critique of Pure Reason*). This was perfectly compatible with psychology's genetic method: *a priori* and *a posteriori* are respectively what comes *before* and *after* in a chain of conditions. In a naturalistic and genetic perspective *a priori* does not necessarily mean *unconditioned*. From a phylogenetic perspective, mental categories are the result of development in the same way as the various organs of the body. From an ontogenetic perspective, they develop differently in each individual in relation to different conditions. Once developed, categories, rules, and principles become part of the mechanism of the mind and operate spontaneously. Thanks to their interaction with the eco-system, an interiorized rule becomes a force that operates, even unconsciously, in mental processes (ivi: 102-104).

Idealist philosophy had erased this distinction between verbal

and non-verbal mental mechanisms, excluding empirical psychology from the pantheon of philosophical disciplines. In so doing it had reduced the variety of strategies pertaining to the mind to the abstract unity of thought and language. The confutation of this tautology – the identification of language and thought on the basis of a previous reduction of thought to *verbal* thought – is the reason behind Steinthal's interest for the bodily, intuitive-representational roots of discursive thought. Reconstructing on the one hand the genesis of the categories of the mind, and on the other hand their linguistic embodiment, is the task of a *physiology of forms*, i.e., psychology.

In fact, verbal language is just one of the many incarnations of intelligence. The identification of thought and language is clearly an untenable position for Steinthal, who insists on the many forms of non-verbal intelligence in animals and humans. Animals are speechless, yet capable of remembering, recognizing, predicting, and performing inferential reasoning. The deaf-and-dumb are capable of a full intellectual development. The majority of our behaviors – even the highest forms of intelligence, such as aesthetic judgments and calculation – are based primarily on perceptual and intuitive codes. Mathematics, geometry, logic, physics, chemistry use ideographic codes more than verbal ones, figures and forms that «are not read and spoken, but rather seen and thought» (ivi: 51). At its most basic level, thought is essentially iconic, a *Bildschöpfung*, a creation of images. «Only in the median sphere of thought does language habitually reign» (Steinthal, 1855: 155-156). If language and thought were one and the same thing, thought would be *Sprache überhaupt* and it would be impossible to account for the diversity of languages. In short, a relation between thought and speech cannot be denied, but relation does not mean identity. *Identitätsphilosophie* obliterates distinctions and merges everything into a single unity: for those who – like Karl Ferdinand Becker, the author of *Der Organismus der Sprache* (1827), and one of Steinthal's *bêtes noires* – adhere to this position, there is no thought and no language, but only a confused *Denk-Sprechen* or *Sprech-Denken* (ivi: 162). Words are not concepts: at most, they are crutches that help us think, sign-posts used by thought to mark its way. They are tools that accompany thought but do not constitute its essence, because thought always

requires non-verbal perceptual and intuitive procedures as well as formal elaborations independent of phonic articulation. Indeed, «thinking by intuition or images, in the absence of signs, is absolutely natural» and, while thought is woven with languages, speech is not the only body in which thought may live (Steinthal, 1881: 52-54; 1855: 152-163). Language and thought develop in the child at different stages and, even in the normal adult subject, they support one another but do not coincide.

Thus, linguistic representation is a specific mental format with its own logic, i. e. laws and ways of data processing. To logic proper, «one must not attribute a priority over other forms of logic, nor the right to have them answer to it, to interfere with them, control them or establish the extent of its dominion; other logics, so to speak, are different from it and autonomous in their own spheres». It is evident that with *logic*, Steinthal is referring here to any system of rules governing an epistemic domain: chemistry, in this sense, can be defined as the logic of natural bodies, physics as the logic of physical motion, and so on. «There are different modes of thinking and therefore different logics, and language is related to all of them, but only in the sense that language does accompany thought through procedures and laws of its own, and manifesting its own categories» (ivi: 224). In other words every mental format, once verbalized, must submit to the rules of verbal representation, i.e. grammaticality. «The only acceptable hypothesis is that [language] is a totally different way of thinking, which develops according to laws and categories specifically belonging to this type of thinking and represented in grammar». *Thinking for speaking*, could we say, borrowing a recent definition (Slobin, 1987 and 1996) of such a specific modality of thought, molded into the grammatical and semantic forms of one among the natural languages.

2. «Psychical mechanics» and language

This point is further defined by Steinthal's distinction between *Vorstellung* and *Darstellung*, two types of representation strictly related, which I will distinguish, when necessary, as internal and external representation: «Language has, along with an external

side, an internal one: but this internal side [is] as different from the logical form [...] as the form of a painting is different from the story it represents» (Steinthal, 1881: 59).

Linguistic *Darstellung*, like all external representations, follows its own rules determined by the nature of its means and goals and not by that of the object it represents. It tends to use images, to reduce the abstract to concrete, to make distinctions (grammatical distinctions) that have no basis in reality, for example attributing gender also to unanimated objects. It is essentially inadequate, as it never renders an exact image of its object. The visual code, for example, represents three-dimensional objects in two dimensions. Discourse, on the other hand, while having an exclusively temporal dimension, can represent more than one object at the same time and express multidirectional relationships in space.

As for *Vorstellung*, or internal representation, it is the result of a «psychical mechanics». The construction of consciousness starts with an undifferentiated feeling, which belongs even to babies or embryos: a subjective state, an experience of qualitative states lacking any intentional content. In this obscure feeling, «the external world operates [...] solely as something undetermined, indistinct» on the subject, who remains an equally undetermined being (ivi: 307-324). The two are still combined in an indistinct and formless unity.

From this feeling perception develops. Each organ of sense shapes contents according to its own way. Perceptions are localized and, more important, selected according to the characteristics of the organ, which transmits only the pertinent ones among the stimuli it receives, and modulates them according to varying degrees of intensity. In perception, the mind learns by experience along the way. The result is the knowledge of something external to the subject, that we now apprehend through intuitions (*Anschauungen*). This *Formung*, a physiological formative process, «extracts for the first time a determined content of perception from the undetermined generality of feeling» (ivi: 241-243). The mind is no longer passive. It «learns to distinguish itself from the outside, to position itself in front of it; it begins to constitute itself as a Self and to oppose that Self to the external world. This is the essence of knowing, the distinction between subject and object» (ivi: 237-239).

Perception is essentially topological, a localized feeling that provides us with a first intuition of space, the germ of other categorical notions. Causality, for example, develops from the localization of stimuli and the corresponding perceptions, and the reiterated observation of their relationship. The movements of objects in space, and their position and orientation in relation to the body of the observer, their disappearance and re-appearance, their division and reunification, triggers off the gestaltic activity that allows us to distinguish each object, and ourselves, from the rest of the sensorial universe, separating into distinct units what was previously felt as one. From this, the idea of substances and of the relation between the parts and the whole is born.

This reproduction of spatiality (*Wiedererzeugung der Räumlichkeit*) had been described by Lotze, in his manual of medical psychology, as the process through which the mind constructs a new internal spatial world. Seeing bodies in three dimensions, understanding spatial relations, orienting oneself in relation to one's body, all these are things that we must learn, says Steinthal (1881: 316-317). This learning generates the *intuition* of things and their parts. With this, «we are on the threshold of language» (Steinthal, 1855: 246).

We reach this point at the end of a long training period. Feelings are already present in prenatal life, while the capacity to *interpret* them is something the baby learns in the first two months of its life. In the following two years, says Steinthal, the intuition of things is produced through the repeated observation of movement, of the moving and manipulation of things and of one's body. It is a development that the psychological literature of that period used to describe as much slower and occurring much later than what we know today. It was made to coincide in practice with the timing of language learning, thus establishing an implicit parallelism between control of perceptual experience and the beginning of linguistic categorization. Steinthal adheres to this position, notwithstanding his confutation of the identity between thought and language: only with the development of the child's cognitive skills in his first and second year, «we are not simply on the threshold of language: the very construction of individual intuitions occurs under the guidance of words» (Steinthal, 1881: 307-309, 317-318).

While perception is essentially analytical, intuition is a synthetic

act. The unity of the object «indicates the simultaneous spatial contiguity and global unification of the various perceptions into a spatially extended image, which can be perceived through a single act» (ivi: 322). One can assume that intuition has probably already the status of *Vorstellung*, according to Steinthal, in that it exercises the unifying function of multiplicity that was usually entrusted to concepts: the reduction to a unity of various perceptions of a single object (the horse, for example, that one has seen in different places, times, conditions – saddled, towing, trotting, galloping, etc. – is perceived as identical to itself, as *the* horse). Thus intuition summarizes the perceptual content of a genus, and functions, in this sense, as a concept. In other words, a developed intuition has a content that is not the result of a *single* perception: it is, rather, the discursive connection of many perceptions.

In Steinthal's usage, as well as in empirical psychology, the term *Anschauung* refers both to an intuitive content, organized according to the forms of spatial coexistence and temporal succession, and to a conceptual one, organized according to part-whole and cause-effect relations, and to degrees of generality (genus, species). The presence of these two aspects, the intuitive and the conceptual, can already be detected, says Steinthal, in the common usage of the term. Germans speak of *Anschauung* even for scientifically elaborated perceptual contents. For example, they say *Ich habe eine Anschauung von einer Dampf-Maschine gewonnen* (literally, *I've managed to get an idea of the steam-engine*) when they have grasped the principles of mechanics that explain the machine's functioning, or *Ich habe keine Anschauung...* (literally, *I have no idea...*) of the steam-engine, even in the presence of the machine or an image of its form and components (ivi: 98-99). This suggests the difficulty of pinpointing the moment of transition from intuition to the corresponding concept. The difficulty depends on the fact that intuition itself is a complex mental content of which we become aware only by reconstructing all of its elements in our memory.

What makes the discrimination neat is verbalization. «We call a content intuition to the extent that it is essentially made up of sensible perceptions, and we call it concept when and to the extent that is expressed in words, which have always an abstract sense» (ivi: 99, 111-112). Language is the supreme tool for reducing multiplicity to unity: «through a word, a sum [of the perceptions that

constituted the intuition] is reduced to a unity» (Steinthal, 1855: 319).

A long tradition had upheld a theory of the word as the primary tool for unifying multiplicity, indeed as the only tool for identifying and re-identifying an entity notwithstanding the modifications and transformations it underwent. It is in the spirit of that tradition that Steinthal states: «the word now contains the meaning of the thing in itself: it designates the unity, to which the sum of sensations belongs, the inalterable core, that remains fixed, as it is, even when part of its characteristics were to change». In linguistic units things are for the first time given as universals. Thanks to words not only is a sum of intuitions connected into a unit, but units themselves can be reduced to the unity of a genus. Thus «the mind [...] has created with language a world of things in themselves and a world of universals» (ivi: 320-321). Language is a new organ, the more ductile the less it is burdened by sensibility.

When Steinthal states that in internal representation intuition and concept are intimately connected as two faces of the same medal, he is confronting an issue that many psychologists of the so-called *aetas kantiana* had dealt with, i.e., Kant's separation between sensibility and intellect, between aesthetics and analytics. This separation had already been criticized by Herder in his *Metacritique* (1799) in the name of a view of the mind as an ensemble of synergic forces that can be only artificially distinguished into faculties (Formigari, 1994: 34-56; Tani, 2000: 83-90). Like Herder, Steinthal describes language as a competence rooted in the most basic levels of symbolic organization, whose cognitive function is to complete the process of unification of multiplicity already begun by perception. Like Herder, Steinthal holds that the intuitive component of representation is not erased by the concept, and that image and concept are mutually integrated in the word.

3. *The threshold of language*

Once we have acquired the primary form of categorization which allows us to perceive the self and other objects as distinct units in space, we are on the threshold of language (see above, §2). When we pass that threshold, a new form of mind-body coordina-

tion appears, that is, articulatory motions. «Language learning is not the combining of sounds and representations, nor is speech a simply associative act: [...] it is a reflex, in which every represented movement provokes a real movement» (Steinthal, 1855: 361). Articulation is an example of the connection that feeling, and mental activity in general, has with movement (ivi: 251-252). More specifically, it is an example of the connection between the observation of movement and its subliminal reproduction: a sort of motory simulation, like the one we experience when we look at a fencing match, or when we hold a pendulum with an apparently motionless hand. The same holds for all motions – articulatory, physiognomical, mimical, gestual – stimulated by representations. In linguistic understanding, as in the phylo- and ontogenesis of language, an unconscious motor activity comes into play, which Steinthal describes as a sympathetic participation comparable to the one that causes the spread of the same symptoms among the patients of a hospital, or the one manifesting itself in collective behaviour of orgiastic dancers or war heroes. A tacit imitation of movement suggests an analogy of personally experienced sensations and emotions with the actions observed in others. Thus an intersubjective space of shared meaning arises.

Medical literature had already elaborated a theory of the reflex as the basis of verbal articulation. Johannes Müller's *Handbuch* (1840-1844) contained an established anatomo-physiological description of the articulatory reflex and an up-to-date analysis of its neurological conditions. From a methodological perspective it was an example of *denkende Erfahrung*, a practice in which the requirements of the theory were well-balanced with those of experimental method. In book VI of Müller's work, Steinthal could find a draft of a psychological theory of representation. Lotze's medical psychology, on the other hand, offered him a theory of *Objektivierung*, the creation of objects through the localization of stimuli which he drew upon for his distinction between primary feeling and localized sensation. It also offered a theory of the articulatory function as based on the mechanism of reflex movements.

For Steinthal, even endophasia, or tacit verbal thought, has the power to trigger an internal articulatory motion, a tacit imitation of articulation. «Our representational thought is, I will not say tied, as much as deeply immersed in sound, so that even when it is

silent it proceeds through imaginary voices, interiorly evocated» (1881: 361; see 1855: 153). This thesis was already present in Herbart's psychological writings. It had been developed by the *Idéologues* and by later French psychologists, starting from the notion of *habît* (*habitude*), and had been abundantly used in research on aphasias. Steinthal too had found in his study of pathologies (and specifically of articulatory impairments: see Steinthal, 1881: 454-455) a confirmation of the importance of motory aspects in orienting, so to speak, thought in the direction of language. This, however, did not prove for him the identity of thought and language, on the contrary it indicated that speech is not a free activity, but rather an urgent instinctual need.

Lotze had already described the drive towards language in his medical psychology: «Every involuntary sign, every cry of pain, or singing in vocal animals, leads us to believe that a physiological necessity transfers the stimuli from the sensory nerves and the central system to the muscles of respiration and voice, [...] in order to provide the mind with another medium to express its internal conditions» (Lotze, 1852: 259). Steinthal takes this as his starting point to relate his theory of representation to a psychomotory theory of speech. The connection between mental activity and movement transcends the will of the subject. There is a sort of compulsion to language, intrinsic to the anatomo-physiological basis of humans (1855: 251-252). It can consist of analogical reflexes, such as articulatory reflexes, and non-analogical ones, such as laughing, crying, moaning. Like these, articulation is a respiratory motion and shares their sonority. On this subject too – the close connection between mental states and the mechanism of respiration, of which language is an example – Steinthal could find confirmation in the literature of clinical psychology, which had long observed this phenomenon (see Kempelen, 1791).

On the strength of medical studies, Steinthal states that the connection between representation and articulation is involuntary; that reflexes produce the same mental reactions that would have been produced by the actual represented objects or events; and that these reactions, in turn, generate new articulatory responses (1855: 248-249). In this stimulus-response chain, mimical and physiognomical acts of the entire body are involved (*quot membra, tot linguae*), also produced by reflex movements. The phonic articulatory

element is the material substratum, the support, of the intuition; it is the condition for the objectification of intuitions (ivi: 304).

The compelling force that biological conditions exert on language suggests, according to Steinthal, that speech was not originally aimed at communication. Communicative function is an accessory one («once born in the course of individual psychical development, language becomes a tool of communication, as unintentionally at the start as unintentional had been its birth»: ivi: 316-317). It is a secondary effect of empathy, a sort of contagion that prompts people to interpret the mimical, physiognomical and articulatory reflexes of their interlocutors, to provide them with meaning.

«Reflex movements are nature's school, the way nature imparts instructions for conscious movement» (Steinthal, 1881: 274). Lotze had used a similar metaphor to explain unconscious psychophysical processes: these are a proxy that the mind gives the body so that it can perform in its stead the primordial functions required for survival (Lotze, 1852: 255-256, *passim*). Lotze was also the author of the entry *Instinct* for Rudolph Wagner's *Handwörterbuch der Physiologie*, where reflex movement was presented as the instrument through which nature leads «the mind by hand, [...] through the unknown land of space and matter [...]. If physiologists had not discovered reflex movements at an empirical level, psychologists would have had to postulate them on a theoretical one» (Lotze, [1844] 1885: 226).

The immediate response to internal or external stimulus by physiognomical, pathognomical, and vocal actions pertains to the body; the mind may at the most be responsible for the possible inhibition of response. Such is the power of this simple physiological mechanism, that we may say that «we learn to be silent, in the course of our life, only after having learned to speak» (ivi: 230-231; see also Steinthal, 1855: 255-256). Steinthal provides an anatomo-physiological explanation of the concomitance between physiognomy and speech, derived again from the observations of Johannes Müller: articulation is jointly produced by the facial nerve (the physiognomical nerve *par excellence*), the vagus, and the hypoglossal nerve (the latter, an articulatory nerve *par excellence*).

By developing Lotze's theory of human articulatory specialization, Steinthal feels he has found half of the answer to the question: *what is language*. «After having identified the elements of language

as they are contained to some extent in the prelinguistic stage of man, we can try to position them in the live performance of verbal activity» (ivi, 1855: 259). The second half of the answer is the beginning of consciousness, the overcoming of the involuntary association between stimulus and articulatory reflex, and the appearance, in its place, of a conscious response to mental stimuli.

4. *Representational interaction and the construction of subjectivity*

Among the obstacles to the establishing of scientific psychology, Herbart had cited the model of subjectivity elaborated by idealistic philosophies: a subject conceived as self-representation, as the generating principle of multiplicity. To this he had opposed a genetic theory of the mind: development starts with the corporeal self-awareness of the child, who learns to think of himself and feel himself as a subject and to distinguish himself from things, and finally to achieve the adult perception of the Self as the center of a representational network. To describe this process, Herbart had used a term, *apperception*, meaning a procedure for appropriating constantly new data, for connecting and merging them with already operative representations to form new cognitive entities, i.e., new representations. Apperception is responsible for the constitution of representational series more or less dominant and active in consciousness.

An empirical consciousness constituted in such a way, through the prolonged action of apperceptive procedures, is a finite consciousness: the limits of the subject are the limits of his representations. This did not mean reducing mind to its conscious content. Adopting such a position would make it impossible, among other things, to account for the function of the cognitive unconscious. Both Herbart and Steinthal assign a crucial role to the unconscious in the dynamic of representations and in that reciprocal towing of representations and utterances that ensures the connection between speech and thought.

The term *apperception* is used by Herbart, and by Steinthal after him, in an acceptance that differs significantly from the traditional one. It had formerly denoted the self-reflective knowledge of one's internal states and was used basically as a synonym of con-

sciousness. In the new acceptance, it is not the subject who apperceives his own contents, but rather an already structured content that apperceives new ones and aggregates them in more or less complex and articulated units. Concretion, blending, combination, attraction are some of the metaphors used by Steinthal (1881: 114-115, 121, 123 *passim*) to describe the aggregation of representations into masses as a process resembling to chemical interaction. Apperception is a function strictly connected to symbolical activity, it processes information, and is the basic function of consciousness. Data are not passively stored in memory in their original form; rather, they are assimilated into the network of pre-existing representations, where they are elaborated and classified. Through this process, representations can connect with the entire cognitive content of a subject and exert their power. Thus, apperception is not a mental process among others, it is «rather, in its absolute generality, the core of mind's activity, the basis of all cognitive acts» (ivi: 181).

Within this map of the mind as representational universe, Steinthal sees language as only one of the many cognitive strategies of the subject, though certainly the most important one. Verbal thought is a specific variety of representational activity that does not exclude other non-verbal forms of representation; indeed, as we have seen, it presupposes them. The existence of non-verbal forms of thoughts, complementary to verbal thought, had been taken for granted in language philosophy up to Humboldt. It had been obvious, in particular, to Locke and Condillac, the two most influential authors in this area. For them, verbal representations were related to a larger representational network and had their roots in the sensory organization of experience, from which they derived their semantic power. From this common basis the various modes of expression of different natural languages are developed, with only a relative degree of autonomy, giving the imprint of historical individuality to the natural products of the physiology of the mind.

It is true that few times, in the history of Western philosophy, the coextension of thought and language was upheld so firmly as by the philosophers of 17th- and 18th-century empiricist tradition. But it is also true that their unified theory of language-cum-thought was always preceded by a theory of sensibility. It was part

of a theory of the mind in which non-linguistic strategies of thought play a primary role and have the power of conditioning the very genesis of linguistic signs and their use in communication. The co-implication of linguistic and non-linguistic thought was taken for granted. The specificity of verbal representations laid in the fact that they were not linked to a specific mode of experiencing reality, whereas other forms of representation necessarily depended on their specific sensorial source. This sufficed to explain the more elevated and complex organizational capacity of language compared to other forms of representation, but did not justify a notion of language as an autonomous essence, or the ascribing of the entire representational content of the mind to the domain of linguistic representations. In the wake of this tradition Steinthal refutes the philosophies of identity, assigning to non-verbal thought a crucial role in the strategies of the intellect. There is another crucial point, as we shall now see, on which Steinthal departed both from idealistic philosophies and the previous cognitive tradition in general: the distinction between mind and consciousness.

5. *The cognitive unconscious*

Reflex articulatory motions are not the sole activity that occurs in the absence of the subject's direct intervention. The production of utterances in natural languages, as well as their understanding, is based, for Steinthal, on the re-actualization of representations of which the subject has only an implicit knowledge before speech makes them emerge beyond the threshold of consciousness. Grammaticality is the effect of an interiorized competence and is also latent. The three components of human language – phonic-articulatory, semantic, morphosyntactic – are all based on latent psychophysical processes.

To uphold this thesis, one had to renounce a principle that had been consecrated by a centuries-old tradition: the identification of mind and consciousness. This is what Steinthal did, presenting his position as an explicit break with the dominant philosophical tradition and even with common sense (1881: 131-132). David Romand (2005) has documented the diffusion and importance of the discussion on this subject among German epistemologists of Steinthal's

and of the previous generation. But Steinthal was probably the first to use this theory to explain the production of utterances on the basis of an implicit grammatical knowledge, and the understanding of language as a synergy of latent and conscious representations. This was in any case the opinion of his contemporaries, among which Paul (1920: § 12) and Delbrück (1901: 28-29), according to which the greatest discovery of modern psychology was Steinthal's thesis, that a large part of mental procedures occur in the dark region of the unconscious (*der dunkel Raum des Unbewussten*), where those representations that are not the immediate focus of attention lie dormant, waiting to be re-actualized. Language connects these oscillating representations (*schwingende Vorstellungen*) with actual ones: it is «a sixth sense, whose purpose [...] is to connect [...] mind and consciousness» (Steinthal 1881: 436).

Reproduction of spatiality (see above § 2) plays an essential role also in this process. When we think of actual representations, we cannot help picturing them as points in space, and their relations as articulated in space. When we think of our store of unconscious representations, we cannot help picturing them as situated «in a deep dark space, from which they emerge one after the other in the restricted space lit up by consciousness» (ivi: 133). These are misleading metaphorical images, however, says Steinthal. Consciousness and the unconscious are not *containers* but rather *states* (*Zustände*) of the representations (ivi: 132; see 182). Consciousness is the sum of active representations, a product and not a primitive fact (ivi: 188-189). On the other hand, we cannot oppose consciousness and the unconscious as a state is opposed to another state. Representations can be found in consciousness in different degrees. They can be apperceived, that is, made conscious through processes of passive or active attention, according to countless perspectives (ivi: 193-196).

In any case, latent representations govern a good deal of our behavior. Unconscious and yet active phenomena include metaphysical categories and the forms and rules of logic and grammar; the production of language; diachronical change in languages (ivi: 164-166). The phonetic elements of language are also representations that even when active remain under the threshold of consciousness, where they enjoy a cognitive-linguistic primacy, due to their power to re-actualize unconscious mental contents to a much

greater degree than visual images. Consciousness seems even more capable of preserving linguistic sounds in a state of flux than written characters. Proof of this is the fact that children have difficulty understanding the overall meaning of a story when they read it one letter after the other, whereas they grasp it immediately when someone narrates it to them. Even in adults, representations are directly tied to sounds and only indirectly to writing, at least in the case of the mother tongue (ivi: 239-240).

All linguistic competences are active primarily within the domain of the unconscious. The existence of an unconscious phonological competence is attested, according to Steinthal, by various phenomena – the regularity of phonetic change, the presence of rhythm and meter in popular poetry, the assimilation of foreign words in natural languages – and is independent of writing or education. Also unconscious are the connections among representational contents, on which semantic competence is based, and the formal connections among representations which provide the basis for morphosyntactic competence. Equally unconscious are the networks of analogies that aggregate into specific categories nouns having the same inflection, words with the same suffix, all possible relations between subject and predicate, all possible usages of disjunctive or adversative forms, and so on. The ontogenesis of language is proof that all these analogies, laws and categories can be active in the most appropriate and creative of ways without the subject having any notion of them. The child, for example, though having no notion of cause, is capable of constructing causal propositions differing in matter but having the same form. He develops a syntactic norm, that is the representation of the formal unity of a pertinent group of propositions, while learning to understand the corresponding propositional form (ivi: 238-247).

Thus, for Steinthal all the fundamental competences of language arise, and are active, below the threshold of consciousness. The same holds for speech performance and comprehension. A proposition can never be completely present in consciousness as a simultaneous unity. When one speaks or writes, when one listens or reads, the various parts of the utterance, though distant, must be apperceived in function of one another. The grammatical subject at the beginning of a sentence, for example, must be apperceived in relation to a verb even when the latter comes at the end. As a dis-

course unfolds, every sentence must be apperceived in relation to those that precede and follow it (Steinthal, 1860: 107-108).

It is in the «deep well» of the unconscious that we find the causes of many linguistic phenomena. The very essence of language lies «in the establishing of connections between the two spheres of the mind» (ivi, 1860: 110).

Think of the mind as a piano: what we call consciousness is the keyboard; the strings hidden in the case correspond to the whole of our mental store [...]. The pressure on the key makes the string vibrate. In the same manner the word, echoing in consciousness, makes the mental content vibrate. Word and content are so connected, that the latter becomes active as soon as the former resonates (Steinthal, 1881: 434-435).

6. Conclusion

The advent of language coincides therefore with the advent of consciousness, the culmination of a process of elaboration of sensory data that is, at the same time, a development of mental functions. From this perspective, Steinthal's theory does not depart very much from the model elaborated by 18th-century anthropology, starting from Condillac, if not for the fact that Steinthal treats communicative intention, and therefore the social use of sounds, as a secondary aspect, coming after the psychophysical causes of verbalization, whereas Condillac and his school tended to view the two aspects as implicating one another.

A second, obvious, difference is that Steinthal had access to a literature on psychology and physiology that was incomparably richer than that of his predecessors. We have seen the frequency with which he refers to the works of Müller and Lotze for his phonic-articulatory theory and for his description of mental mechanics. The theory of reflex provided a scientific basis also to ancient theories that had become part of philosophical common sense. Specifically, the notion of analogical reflex could explain the unconscious mechanisms of vocal and synesthetic imitation through which 18th-century naturalism had motivated the origin of language. Similarly, the notion of non-analogical reflex could serve to explain the basic vocabulary of the *cris de passion*, which for naturalism was also a source of articulated language.

Steinthal used the results of medical psychology to reconstruct the abstract conditions that make language possible. The way in which these conditions develop in different historical situations, leading to the various historical languages, is another interesting aspect of Steinthal's philosophy, that makes him one of the founding fathers of cultural anthropology (see Trautmann-Waller, 2006). It also marks yet another difference between Steinthal and 18th-century language philosophy, which had taken for granted the continuity between the natural abstract conditions of language and their historical realization in languages. For Steinthal instead, this transition marks an important epistemological break, the one between individual psychology and social psychology (*Völkerpsychologie*), behind which lies an even more important break, i.e. the one between natural and historical sciences.

There is another and no less important difference between the epistemological conditions in which Steinthal and 18th-century naturalism operated. Kant had imposed a distinction between the form and the matter of knowing, which had been criticized by many of his contemporaries (Herbart among them, whom Steinthal acknowledged as his master), yet could not be ignored by anyone engaged in psychological research. The relation between Steinthal and Kant is a complex issue that cannot be dealt with here. It will suffice to say that notwithstanding Steinthal's confutation of many aspects of Kant's philosophy – first and foremost the distinction between aesthetics and analytics, intuition and concept – a Kantian influence can be detected in his theory of the mind (and, more in general, in 19th-century German psychophysiology: see Meyering, 1989: 116; Formigari, 1994: 193-195). It is, for example, in the name of the Kantian influence, that Steinthal insists on the necessary participation of consciousness and its structures to all epistemological processes.

This is the source of Steinthal's wish to reconcile philosophical realism and idealism. We may well be «auf realistischen Standpunkte Idealisten», that is, embrace realism while not renouncing an idealist point of view. Ontological realism does not rule out a view of the Self as an active epistemological subject, transforming the data of experience into internal data. Steinthal makes this point in his discussion of August Pott's *Etymologische Forschungen* (Steinthal, 1860). Commenting upon Pott's theory of the parts

of speech, he seizes the chance to touch upon some of the central themes of his theory, among which the relation between psychology and linguistics.

Steinthal's stand on this is important: his psychological theory is based on the notion of the reciprocal inherence of the formal element and the external stimulus in representations. The dependence of consciousness on real determinations does not exclude its intrinsic activity. «Consciousness is something completely different from a mirror and can in no way be compared to it. Consciousness does not receive any stimulus whatsoever from the outside without shaping it to its requirements» (Steinthal, 1881: 12). This *Gestaltungskraft*, the shaping force of consciousness, applies also to the most elementary stimuli. Humans do not *see* naturally, they *learn* to see, to recognize movements, distances, shapes. Recognizing an object does not depend solely on the eyes but also on intelligence. In other words, every act of knowing, every step in the development of consciousness, occurs only thanks to an *a priori* and an *a posteriori* factor.

The effort to reconcile idealism and realism associates Steinthal to many contemporaries of his, who engaged in programs of scientific philosophy, including the study of the psychophysical conditions that make representations possible. These scholars reinterpreted Kant's transcendental analytics as a sort of transcendental *psychology*, a study of the ultimate conditions of human representational activity. It is within this framework that we can presently re-read Steinthal: having overcome the anti-psychologist and anti-representationalist prejudice that has marked most of 20th-century philosophy, it is possible that much of the themes of his work will reveal striking theoretical affinities with the problems that the philosophy of natural languages confronts today.

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3. Schedario/Recensioni