

THE RECOGNITIVE MANIFOLD: A MULTIDIMENSIONAL APPROACH TO NATURAL RECOGNITION AND ITS SUBPERSONAL LAYERS

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Abstract

In this paper I will introduce the notion of ‘natural recognition’, understood as a primary level of recognitive interaction which belongs to our form of life, and which I articulate through the notions of ‘first’ and ‘second nature’. I will then adopt a reconstructive approach and develop a theoretical framework for interdisciplinary research on the ‘recognitive manifold’. Here I will argue that recognitive phenomena are multileveled, multilayered, and multidimensional. I will then focus on the subpersonal layer of recognition, distinguish between its ‘material’, ‘functional’, and ‘phenomenal’ aspects, and I will analyse the role this layer plays for the recognitive constitution of personhood. From this vantage point I will analyse the notion of ‘embodied recognition’, assessing the constitutive role played by the subpersonal layer of the body – both in a genetically-causal and structural sense – as for recognitive phenomena. Habit makes intelligible the relation between the different senses of embodiment and how they relate to subpersonal processes. On this basis I will argue that habit is the fundamental socio-ontological operator for a theory of embodied recognition.

Keywords: Recognition, Embodiment, Second Nature, Habit.

1. *Overview*

In this paper I will introduce the notion of ‘natural recognition’ (section 2), understood as a primary level of recognitive interaction which belongs to our form of life, and which I articulate through the notions of ‘first’ and ‘second nature’. I will then adopt a reconstructive approach, and develop a theoretical framework for interdisciplinary research on the ‘recognitive manifold’ (section 3). Here I will argue that recognitive phenomena are *multileveled* – distinguishing between ‘foreground’ (reflective, conscious) and ‘background’ (prereflective, unconscious) ones. Recognitive phenomena develop in a *multistage* manner both in phylogenesis and ontogenesis. And they are *multilayered* (I distinguish between ‘subpersonal’, ‘intrapersonal’, and ‘interpersonal’ layers).

sonal', 'interpersonal', 'institutional' layers), and *multidimensional* (I distinguish between 'identifying', 'axiological', 'cooperative', and 'deontic' dimensions). I will then focus (section 4) on the subpersonal layer of recognition, distinguish between its 'material', 'functional', and 'phenomenal' aspects, and I will analyze the role this layer plays in the recognitive constitution of personhood.

From this vantage point I will analyze (section 5) the notion of 'embodied recognition', assessing the constitutive role played by the subpersonal layer of the body – both in a genetically-causal and structural sense – as for recognitive phenomena. Habit makes intelligible the relation between the different senses of embodiment and how they relate to subpersonal processes. Moreover, the notion of habit makes intelligible the relation between subpersonal, intrapersonal and interpersonal layers, and accounts for some of the stage-like aspects of the developmental processes of recognitive interaction. On this basis I will argue that habit is the fundamental socio-ontological operator for a theory of embodied recognition.¹

2. *Natural Recognition and Life-Form*

A basic tenet of classical recognition theory – for instance, in Hegel's account in the *Self-Consciousness* chapter and in Mead's lectures on *Mind, Self, and Society* – is that reflective self-consciousness, both as theoretical and practical robust first person stand point which characterizes human personhood, is constituted by processes of reciprocal recognition. This is both in the sense that it emerges from recognitive interactions embedded within natural life and not yet reflectively self-conscious – such as the sensorimotor activity of desire within the circle of life by Hegel, and the conversation of gestures by Mead. And once achieved, it is essentially constituted by the recognitive capacity of taking the perspective of the other. Hence the recognitive theory of the constitution of personhood, even if this is not generally acknowledged in contemporary literature, involves a more or less explicit appeal to life and a sense of naturalness. If we want to adequately describe the phenomenon of recognition and to conceptually understand its

1 This paper originates from a research funded by the Australian Research Council Discovery Project "The Social Ontology of Personhood: A Recognition-Theoretical Account", and carried out in conjunction with Heikki Ikäheimo, Arto Laitinen, and Michael Quante. In a forthcoming monograph co-authored with the other investigators of the project, I develop more extensively the methodological frame I sketch here.

structure, we need to capture this stratum of recognition which is located at the level of natural living processes. First, recognition is always a direct or indirect manifestation of a vital process (Testa 2008) – which is true even for recognitive agency understood as a practical taking and attributive attitude and for institutional forms of recognition where inorganic plural or collective subjects may be involved. Second, the theory presupposes that there is a basic or primary level of recognitive interaction – which I'll call 'natural recognition' (Testa 2010) – that takes place ontogenetically before personal structures are acquired, may be continuously operative at a subpersonal level below them, and could be shared with other living animals and be phylogenetically relevant for the emersion of higher forms of recognitive interaction. Third, arguing that recognitive processes are constitutive of human personhood, the theory assumes that the peculiar way in which natural recognition gives rise to our personal capacities, is a trait that characterizes our human form of life, that is the way we can describe from within our natural way of life. Which means that the way we can grasp the notion of personhood is a form of self-interpretation of our animal life form, but does not mean that there is a necessary conceptual relation between being human and being a person, and that we could never meet other life forms, even artificial ones, endowed with personhood.

Conceived in these terms, the recognitive approach is a peculiar socio-ontological reconstruction of the classical thesis of humans as naturally socially animals, where the notion of recognition is supposed to be the interactive mechanism which plays a constitutive role for it. It is important to note that such an appeal to naturalness is not the mere result of a 'sideways on' or a 'from nowhere' objectivist perspective, but is rather a perspective which individual bearers of our form of life can access from within. Having a biological form and a functional organization is an inescapable aspect of our life form. The biological traits that characterize the organization of the human form of life can be both phenomenologically experienced from within, in the experience of our living body, and can also be re-described according to the level of age reached by the empirical science of the living. And this latter, objectifying description, can in turn have an impact on and modify our self-description from within.

One way to describe and conceptualize some aspects of this interweaving leads to the introduction of a distinction between 'first nature' and 'second nature': a distinction which applies to the description and conceptualization of the phenomenon of recognition (Testa 2009). This distinction must in turn be understood as a context-relative, not absolute one, and as being subjected to an internal dialectic, in accordance with the dynamic nature of

the phenomenon that it should capture and with the place-holder character of the notions of first and second nature. As seen, recognition theories refer, implicitly or explicitly, to a characterization of human nature. They assume that recognition is constitutive of our form of life. This seems to imply that recognition is not only compatible with our nature, but in a stronger sense falls within our natural potential: which implies the assumption that we are born with a natural endowment that, in some way, predisposes us to recognition. This is equivalent, to a certain extent, to saying that recognition is in some way related to our first nature. Note that the notion of first nature may be characterized differently: original nature, nature with which we are created, nature with which we are born, innate nature, physical and biological nature – which means in any case something given and not acquired.

In a nutshell, the fact that we have a social and cultural second nature is in itself a fact of our first nature, that is, it is something which characterizes our life form (see also Thompson 2008 and 2013). And as individual bearers of this life form, we can legitimately presume to have an access from within to our first nature. According to a physical-biological characterization of natural recognition, first cognitive nature will then be understood as the set of biological structures, functional mechanisms, and phenomenological experiences that we take as being the basis of the cognitive process that coordinates the interaction between human animals. That there is such a biological basis is an implicit assumption in theories of the social animal and in the constitutive theories of recognition, even if not always an acknowledged one. For instance, Hegel admitted as much when he placed recognition already at the level of the animal organism and of its systems of sensorimotor interaction and animal reproduction (Testa 2012a). If recognition theory makes sense, then there should be such a material biological basis to it, but of course the determination of whether there is one, and how it is functionally organized, is an empirical matter. However, today there are several scientific theories which appear to be candidates for specifying different aspects of the material biological basis of different aspects of natural cognitive processes: for instance, Edelman's neural Darwinism, the neurobiology of mirror neurons and imitation by Gallese, Rizzolatti and others, Tomasello's cognitive ethology, Bowlby's and Fonagy's developmental psychology etc. Even if reductionist results, according to which we could give an exhaustive account of the phenomenon of recognition only in terms of a specific scientific-empirical description of the phenomenon, are always incumbent, and cannot be excluded a priori, such theories are in principle compatible with a liberal and pluralist approach to the

naturalness of recognitive phenomena, according to which the biological basis predisposes us to developing dispositions and social forms of life whose characterization requires levels of description and vocabularies that cannot be (so far) reduced to the vocabulary that can be characterized in terms of the first natural mechanisms of our proto-social interaction. Anyway, the constitutive theory of recognition seems to offer a viable model for an interdisciplinary approach to human interaction which can combine empirical analysis of our human basic interactive competences and rational reconstruction which renders theoretically explicit the intuitive pre-theoretical framework underlying them and the corresponding ontological commitments: that which may be called reconstructive social ontology.²

3. The Recognitive Manifold: a Multilevel, Multistage, Multilayered, and Multidimensional Approach

Let me first introduce a distinction between three different *directions* recognition can take (Testa 2011): 1) Re-identification: identification and perceptual re-identification (numerically, qualitatively and generically) of objects on the part of a subject; 2) Self-recognition: relation to self of a subject, of a type that is both re-identificative and attestative/performative; 3) Reciprocal recognition: relation between two or more subjective agents (and recipients) who coordinate their interaction by reciprocally identifying one another, attesting their identity and referring themselves to variously codified standards of behavior (functional, implicit, informal, formalized). The latter direction, which encompasses the former, is the one we have been so far referring to while speaking of recognitive interaction.

Now, a reconstructive approach to recognition, suitable for articulating a theoretical framework for ongoing interdisciplinary research in the field of intersubjectivity, seems to require us to understand recognition as

2 To my mind, there is no reason why reconstructive procedure should be applied only to the analysis of symbolically pre-structured realities – as Habermas claims – and could not extend to pre-linguistic deep structures. Habermas' argument that reconstructive science should be limited to realities accessible only through interpretation (Habermas 1998), is finally based on an opposition between description – accessible to objectifying natural science – and interpretation – accessible to hermeneutical science – which does not seem to understand the fact that not only is there a non-ineliminable descriptive component in interpretation, but also that our descriptive access to life processes, for instance, has an ineliminable interpretative component.

a manifold rather than as a unitary capacity.³ First, recognitive phenomena occur not only at the propositionally structured intentional, reflexive and purposeful level, but can also be not purposeful – and occur at the pre-intentional level of implicit, pre-reflexive forms of affective, emotional, attentional attunement. A *multilevel* approach seems then to be required, which can distinguish between the upper level of *foreground recognition* – including different possible combinations between intentional, purposeful, and reflective attitudes – and the lower level of *background recognition* – including different possible combinations between pre-intentional, not purposeful and pre-reflexive attitudes. Second, recognitive interaction develops in diachronic stages, both in ontogenesis and in phylogenesis, with lower stages – some of them shared with other living animals – serving as prerequisites for higher ones (Zlatev 2008). Hence, a *multistage* account seems to be required, which includes at the bottom forms of primary recognition which are not yet linguistically structured, and at the top linguistically structured forms of recognition between already constituted persons. To be sure, the notion of ‘intersubjectivity’ should be reserved for the latter recognitive relations between subjects endowed with fully-fledged personal and linguistic capacities, and understood as a species of the wider genus of recognition, which also encompasses not yet intersubjective stages of recognitive interaction. The idea that recognitive interaction constitutes personhood, then, means that there is a stage of it which ontogenetically and phylogenetically precedes personhood and which is causally relevant for bringing about some features of personhood. Third, recognition, even in its synchronic functioning, is a *multilayered* phenomenon, which can be instantiated not only at the intrapersonal (personal psychological capacities), interpersonal (status-like intersubjective relations between individual persons), and institutional layer (status-like relations between individual persons and institutions or between institutions), but which involves also a subpersonal layer.⁴ The multilayered structure of recognition is a synchronic phenomenon, which develops itself in a stage-like manner: which means that upper layers lay on lower layers (for instance, the institutional layer lays on top of intersubjective practices, personal capacities, and subpersonal processes). And such a relation between layers should be distinguished from their reciprocal *mediation*: the fact that, for instance, some institutional standings mediate intersubjective relations between individ-

3 For the use of the notion of “manifold” in the analysis of intersubjectivity, see Gallese 2001.

4 For the distinction between personal, interpersonal and institutional layers of recognition, see Ikäheimo 2007.

uals – who relate inter-individually as bearers of institutional standings – and that some aspects of individual personality are constituted by institutional practices, and that there may be correlative subpersonal material and phenomenological states to these aspects (hence mediated ones), does not mean that the subpersonal, intrapersonal and interpersonal layers are now laying on top of the institutional one.⁵

Moreover, recognitive phenomena are articulated along multiple dimensions which can be instantiated in each layer. A *multidimensional* approach to recognition should distinguish at least an identifying, an axiological, a cooperative, and a deontic dimension of recognitional attitudes.⁶ The idea here is that recognitional attitudes respond to something or someone in accordance with these various dimensions. The recognitive attitude of taking something or someone (or being taken by someone) as X, can in fact involve mere identification, responsiveness to and attribution of value, a strong disposition to cooperate, as well as responsiveness to norms and attribution of normative statuses. It is important to note here that each dimension can be instantiated both in the foreground and in the background – for instance, the axiological one can be manifest and explicit in foreground reflexive attitudes, but also occur in pre-reflexive attitudes – and in multiple layers: an interaction which involves attribution of value can be both mediated by institutions, occur in the background (as is the case with implicit and pre-reflexive processes of socialization), and be instantiated at the subpersonal level (at least in the sense that there must be neural underpinnings of functional mechanisms corresponding to it). As for the identifying dimension, we need to introduce it as a distinct dimension first because every recognitional attitude, even if understood as a practical taking (where someone is taking something as X) always involves an epistemic attitude of identification of something as having more or less determinate properties and pertaining to some kind (see on this Koskinen 2017). Second, we need to introduce the identifying dimension because this plays a relevant role in natural biological processes. Furthermore, this allows us to describe forms of recognitive reification which are characterized by

5 A fourth aspect of the recognitive manifold concerns the fact that recognitive interaction is bodily based and as such it is a *multimodal* activity which integrates in a sensorimotor way multiple modes of natural communication, combining the five human senses.

6 On the notion of “multidimensional” recognition see Ikäheimo & Laitinen 2011, pp. 8-9. In my account, identification should be added to the “deontic”, “axiological” and “contributive” dimensions of recognition introduced by Ikäheimo and Laitinen in their writings.

reductive identification, that is, by the fact that the identifying dimension tends to prevail over the other dimensions and to reduce them to itself (as is the case with the recent expansion of biometric recognition as a means of reductionist social control of identities).

Finally, the multistage development of intersubjectivity lets us also advance the hypothesis that the different levels (background, foreground), layers (subpersonal, intrapersonal, interpersonal, institutional), and dimensions (identifying, axiological, contributive, deontic) develop ontogenetically and phylogenetically in a stage-like manner (from background to foreground level, from the subpersonal up to personal, interpersonal, and institutional level, and from a basic identifying attitude, to evaluative ones, up to a strong cooperative dimension, which finally allows for normative behavior). All along, this approach to the manifold structure of recognition also allows for a gradual model, according to which different levels, stages, layers, and dimensions are a matter of different interpenetrating degrees in a hierarchical complex structure rather than essential differences in terms of either or necessary conditions.

4. Subpersonal Recognition

Let me now come to the notion of subpersonal recognition, which I have introduced as a distinct layer and which represents the principal novelty of the approach I am proposing. This notion, as already stated, plays a central role in our understanding of the recognitive constitution of personhood – which presupposes that there is a layer of recognitive interaction which is not yet or not fully personal and plays a constitutive role for personhood – both as a genetically causal condition of existence and as a permanent condition of intelligibility. But how exactly are we to understand the meaning of “subpersonal” here? The introduction of this notion is a major challenge to contemporary recognition theory, which tends to limit recognition to the level of already personally structured intersubjectivity, and to understand it as an active and deliberate intentional attitude (at the level of foreground attitudes).⁷ Now it seems to me that it would be more faithful both to phenomenological experience, and to empirical research into primary interaction and its stage-like development and manifold structure to

⁷ See Honneth 2007, pp. 329-330, where recognition is qualified as a practical and affirmative attitude, relative to intersubjective action, and which should be contained in the main scope of the action and not just be a secondary or unintentional scope of it.

make room for recognitive phenomena to happen also in the background in the form of implicit, pre-reflexive and non-deliberate attitudes. But as we have seen, all recognitive layers (subpersonal, intrapersonal, interpersonal and institutional) can be instantiated at the background level. Hence, the notion of background recognition is not identical to that of subpersonal recognition. One could rather say that while the personal, interpersonal and institutional layers can be instantiated at both the background and at the foreground level, the subpersonal layer is only in the background (at least if we assume that reflexive and deliberate thought are proper to fully-fledged personhood).

Let's now try to better articulate the different aspects of the notion of subpersonal recognition. I will introduce here an operational distinction between four main aspects which this notion can refer to: 1) it can refer to subpersonal material biological correlates or underpinnings (such as mirror neurons) of recognitive interactions.⁸ 2) It can refer to functional mechanisms (such as, for instance, the mechanism of embodied simulation in simulation theories of mind reading, see Goldman & Gallese 1998) underlying recognitive interaction and underpinned by some material state. 3) It can refer to a phenomenological aspect, that is to forms of subpersonal phenomenal experience – often mentioned in developmental empirical research on intersubjectivity – that manifest a pre-intentional, pre-reflexive form of embodied acquaintance with or attunement to others. This is also what Hegel in his Jena Lessons described as the “organic individuality” of the natural self (Hegel 1975, pp. 185-186 and 235), that is the embodied, recognitive living consciousness (*Begierde*) which doesn't yet have the personal structure of self-consciousness but is already endowed with a bodily self-feeling and a primordial recognitional capacity of relating to itself as another (Hegel 1975, pp. 241-242; see on this Testa 2012a), and that as such plays both a causally-genetic and a structural constitutive role for the emergence of self-consciousness (what Hegel in the *Phenomenology of Spirit* will name “the process of recognition [*Die Bewegung des Anerkennens*]”, Hegel 1977, § 178, p. 111). And this is what in other terms and from a different perspective Husserl referred to when he spoke of the ‘anonymous’, ‘unthematic’, ‘functioning I’, founded upon a passive and unconscious experience – which amounts to a ‘phenomenology of the unconscious’ (Husserl 1966, pp. 154) – and Merleau-Ponty, in relation to the experience of the other, described as an ‘impersonal’ or prepersonal experience (Merleau-Ponty 1945, p. 382) of the “primordial nature”. Here we

8 On this use of ‘subpersonal’ see for instance Gallese 2005.

are dealing with an underground, depth dimension of subjectivity which remains below the level of personal experience but is nevertheless a manifestation of our living natural subjectivity.⁹ And finally: 4) it can refer to singular subpersonal components of personhood, that is, to person-making characteristics which alone do not constitute personhood.¹⁰ Here one could maybe distinguish between aspects 1 and 2, which are more properly subpersonal, and aspects 3 and 4, which could also be labeled as protopersonal (as for 3, because they can be in the background of personal experience, and as for 4, because person-making characteristics could be thought of as functional subpersonal components in the holistic system of personhood as a whole).

The notion of subpersonal recognition is particularly relevant, in relation to 1), as an operational reconstructive framework for empirical programs which look for material correlates or underpinnings in bodily states of recognitive dimensions of interaction;¹¹ in relation to 2), as an operational reconstructive framework for empirical programs which look

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- 9 See Zahavi 2002 for an attempt to argue that the notion of ‘anonymous I’ is compatible with the first-personal givenness, if understood as a pre-reflective awareness. While Zahavi is right in arguing that the notion of anonymous I captures some aspects of unthematic, pre-reflective awareness, it seems to me that to qualify the latter experience as first-personal in a robust sense misses the point that this anonymous experience is rather a subpersonal or protopersonal one – that is, in the best case a rudimentary form of first-person perspective (on the distinction between rudimentary and robust first-person perspective, see Baker 2015). From my point of view, what Baker names ‘rudimentary’ first person perspective could just as well be qualified as subpersonal or protopersonal I-perspective, since this is shared with beings who either can’t develop (such as some other animal beings) or have not yet developed (such as infants and damaged human beings) a robust first-person perspective, which alone defines essentially personhood according to the author.
- 10 If we conceive of personhood as a holistic social phenomenon, then it cannot be reduced to any person-making characteristics: in this sense, each person-making characteristic is a subpersonal one. For instance, even rationality alone could be considered as such a subpersonal trait, since there can be beings who have the capacity of rational means-end analysis without being persons at all, as is the case with some robots.
- 11 This is not to be confounded with a reductionist program, since to look for material correlates or underpinnings of recognitive dimensions does not involve by itself the further commitment to reduce such dimensions to material states (for instance, to affirm that a normative state in the deontic dimension is identical with the neural cerebral states correlated to it) and still leaves room for the idea that such states require other levels of description – other levels of logical representation – which cannot be exhausted by the description of the material states correlated to them.

for ontogenetic and phylogenetic functional precursors of higher forms of intersubjective recognitive interaction which are proper to human personhood; in relation to 3) and 4), as an operational reconstructive framework for the phenomenological analysis of those subpersonal or protopersonal background experiences which not only are supposed to ontogenetically and phylogenetically precede, and somehow constitute, personal and foreground ones, but also accompany them throughout their development and functioning at a deep, unconscious level.¹² Finally, all four of these aspects all together are extremely relevant for a reconstructive socio-ontological program committed to articulating the implicit ontological frame of natural recognition and its subpersonal level.

5. *Embodiment and habituation*

While deploying subpersonal recognition and its instantiations in its different dimensions, the notion of ‘embodiment’ has been used many times. I would now like to elaborate a little bit on this notion in order to understand how it should be modeled in order to capture crucial aspects of the phenomenon of recognition. First, when used in the context of ‘embodied cognition’, embodiment means that cognition is shaped by the kind of organism we have: that is, it is bound up with corporeal and environmental (both natural and social) constraints. Here embodiment can have at least three senses: 1) it can refer to an anatomical understanding of the role of the body, meaning that some parts of our body play a causal role in cognition due to their anatomical characteristics; 2) it can refer to actions performed through the body – for instance, the upward posture in walking – where the body plays a constitutive role for this action, being a causal condition which is not only concomitant but also necessary for the performance of this task; 3) it can refer to mental representations that have a bodily format.¹³ This can perhaps be better captured if we use the distinc-

12 Here I can only fragmentary refer to how the notion of subpersonal recognition could be empirically fruitful for reconstructive social ontology. In Ikäheimo, Laitinen, Quante, and Testa (forthcoming) I offer more detailed account of how current interdisciplinary research between the fields of evolutionary biology, neurobiology, cognitive ethology, and developmental psychology can contribute to our understanding of the natural basis of the recognitive dimensions previously identified.

13 For this distinction, see Goldman and de Vignemont 2009, who favor the third sense of the term.

tion between the three senses of embodiment laid out by Lakoff & Johnson (1999, p. 102), who distinguish between 1) the neural level of embodiment, 2) the cognitive unconscious level, which refers to the background structures and functional mechanisms of cognitive activities, and finally 3) the level of phenomenological conscious experience, which refers to the way we pre-reflexively schematize our body and things we interact with daily.

In this way we can understand both the constitutive role of the body – both in a genetically-causal and structural sense – as well as the background character of the phenomenological experience of its functional mechanisms. Still, one can detect in Lakoff & Johnson an excessive focus on the brain, which to my mind doesn't successfully capture the role of the body as a whole as a vehicle of cognition and of recognition. Moreover, the crucial point when speaking of embodiment, refers to the enactment of patterns of behavior in bodily form. This regards the way in which action is inscribed on the body as a whole (and hence the constitutive role of the body for action, as in the example of the upright posture). Finally, such an understanding of embodiment should not consider the individual body as being isolated from the environment it interacts with, but should rather perceive the dynamical – or enactive – process of reciprocal adjustment between the organism and its environment. Which, if we follow here Dewey's lesson (1983, p. 38), is a process where the living body, adjusting *to* the environment and its constraints, incorporates some of its features. While at the same time this is a process of adjustment *of* the environment (which in some other sense incorporates some aspects of the living bodies it interacts with, as happens with the phenomenon of the socio-ontological constitution of some aspects of natural objects through work or other human activities).

If we now reconsider embodiment as a process of inscription on the body of patterns of attitudes, we are in the best position to understand how recognition comes to be incorporated and can thus be qualified as embodied recognition. To my mind, here the notion of habit plays an essential role. First, habit makes more intelligible the relation between the three senses of embodiment and, when understood as a process of habit formation, offers a dynamic account of their interpenetration. In fact, habits presuppose the natural process of our living body and are in this sense *supported by* its physiological, anatomical, and functional configuration. It is bodily living beings who first come to develop habits. But habit formation is also a process of *inscription on* the living body of behavioral traits through exercise and repetition. Such an inscription is something which must have a material realization at the cerebral level (say in the configuration of correlated

neural patterns), and as such is inscribed in the causal chains of bodily activity – and in a wider sense the living body.¹⁴ But more broadly speaking it is a process through which the whole living body may be reshaped in some aspects of its physical appearance if not its structure. In this sense the recursive structure of practice and repetition makes it possible for a habit to be both cause and effect of its own enactment in the individual body and in its environment (see Egbert and Barandian 2014). Second, the embodied process of habit formation constitutes new bodily capabilities of doing something, that is, causal abilities to perform something through the body. For instance, the upright posture is not only an enabling condition of walking – a causal mechanism necessary for walking to occur – but constitutes what walking is. In this sense habit’s embodiment plays a constitutive role for our agency and its causal powers not only because it accounts for the sensorimotor structure of agency but also because it allows for the social constitution of agential attitudes. It is exactly in this sense that John Dewey has understood habit as the “mainspring of human action,” (Dewey 1984, pp. 224-335)¹⁵ since action always happens in the context of prior experience, and habit formation can be understood as the process which shapes within the body the regulated patterns of an individual derived from prior experience. Third, habit is a bodily process which has a phenomenological manifestation, which is connected with different levels of pre-reflexive bodily awareness (somatic, emotional, and later also mental) and a sense of the self.

The notion of habit is decisive for understanding the social character of embodiment (see Testa 2020). Habits are normally acquired, through exercise and practice, within social learning processes where individuals interact with each other. This can easily be translated into the notions of first and second nature: habit is built in the organic, living first nature, but nevertheless acquired as a result of a social process through which our materially realized natural functions are reshaped into the second nature of acquired dispositions to interact. Such interactive dispositions are a *second*

14 This allows for a naturalized understanding of habits, which does not involve a deterministic understanding. The relation between habits and their neural underpinnings, if we are faithful to the recursive nature of habits, is rather an enactive one, where habits, as Bourdieu would put it (1990, p. 53), are both structured and structuring structures. In this sense Egbert and Barandian (2014) offer a naturalistic account of habits as self-sustaining patterns of sensorimotor coordination (correlated to sensorimotor-dependent neurodynamic patterns).

15 See also on this point Hegel’s statement that habit is the universal form of spirit (Hegel 1976, p. 132). See on this Testa 2020b.

nature insofar as they are partly constituted by the social process of cognitive interaction, but nevertheless a part of our nature, both in the material and functional sense that they are sustained *by* and inscribed *in* our bodily patterns and causal mechanism, and in the phenomenological sense that they are an immediate possession of our living body, something that we exercise spontaneously and to which we have access from within ourselves (according to the commonsense notion that something is ‘second nature’ for someone).¹⁶

The notion of habit is also well suited to account for some of the stage-like and developmental aspects of human interaction. At an ontogenetic level, individual development is not only accompanied by, but also sustained and shaped by the social process of habit formation in upbringing. And since habits can be transmitted intergenerationally within a culture, which also seems to happen within non human animal groups – as for instance with habits of tool use and handclasp grooming by chimpanzees (see Boesch 1996; Hirata and Celli 2003; Bonnie and de Waal 2006) – then habit formation can also account for some phylogenetic aspects. A closer look at the patterns of interaction through which habits are acquired and transmitted, allows us to see that they can easily be characterized in terms of cognitive attitudes. Even at its most basic levels, habit formation in social animals requires that they implicitly recognize each other as conspecifics, as individual animated agents, and that they are able to see themselves in the other – along increasingly complex forms of perspective taking – simulating and imitating the other’s behavior. And according to their stage of ontogenetic development, the practices of habit formation can involve some or all the dimensions of cognitive attitudes we have mentioned.

Now it is important to note that the notion of habit seems to be required also in order to account for the constitutive role of recognition and hence for its socio-ontological role. As we have seen, in classical recognition theory the latter is understood as a process of constitution of the subject, through which individual abilities and skills are constituted that become

16 Second nature is not then a simple equivalent of “culture”, as it is very often used to mean, which would make that a completely eliminable notion. Accordingly, embodiment cannot then be conceived as a mere replacement of first nature with second nature – as happens in many forms of contemporary constructivism and also in performative theories of the social – a kind of magic according to which our first organic nature disappears in favor of the cultural one: in fact, second nature, in order to work properly, requires that a first nature continues to subsist. Nonetheless, it is reasonable to think that there is a reciprocal, enactive hybridization, that is to say that each of the two poles affects the other.

more or less stable dispositions of the human beings. In this sense, the constitutive theory of recognition seems to require a mechanism by which, starting from a set of functions with which we are endowed, dispositions to interaction are to be acquired iteratively and recursively, which we then attribute to the value of basic capacities of personhood (or person-making characteristics).

The process of habituation, the formation of behavioral habits, is precisely the process by which, through repetition and practice, dispositions to interact are shaped and reshaped. The process and constitutive conception of recognition implies then that recognition is neither a mere one-off event nor a transcendental-logical performance explicable by itself, but rather a self-constituting and a self-modifying process. The notion of habit and habituation thus seems to be conceptually presupposed by the theory of recognition. In that sense, even recognitive functions of the first natural type are such as to require activation, development and extension through an acquisition process that leads to the formation of dispositions of behavior and action. Habit formation accounts precisely for the fact that some attitudes can be socio-ontologically constituted and still be an embodied (and causal) feature of our nature. Moreover, the recursive structure of habits as self-sustaining sensorimotor patterns allows for the emergence, if not of a naturalized notion of autonomy, at least of some sense of self-organization. Here habits, already understood in the philosophical tradition as “mechanisms of self-feeling” (Hegel 1976, p. 131), provide a model for us to understand the constitution of the subject and of its pre-reflexive self-relation as an emergent web of habitual recognitive patterns, which in their rudimentary form are not yet personally structured.

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