Advancing the Human Self

Do Technologies Make Us "Posthuman"?

Ewa Nowak

Do technologies advance our self-identities, as they do our bodies, cognitive skills, and the next developmental stage called postpersonal? Did we already manage to be fully human, before becoming posthuman? Are we doomed to disintegration and episodic selfhood? This book examines the impact of radical technopoiesis on our selves from a multidisciplinary perspective, including the health humanities, phenomenology, the life sciences and humanoid AI (artificial intelligence) ethics. Surprisingly, our body representations show more plasticity than scholarly concepts and sociocultural narratives. Our embodied selves can withstand transplants, bionic prostheses and radical somatechnics, but to remain autonomous and authentic, our agential potentials must be strengthened – and this is not through 'psychosurgery' and the brain–computer interface.

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Introduction. Against the Stream: Searching for a Concept of the Self in Posthumanist Contexts

"Whoever finds himself is superior to the world"

Syrian Thomas' Gospel

The aim in the title may sound a mission impossible-like in the light of the post-selfhood turn[1] that has been observed over the last two decades not only in analytical philosophy and the philosophy of mind but also in the so-called *posthumanism*. If we no longer live in a human world, why care about this "central abstraction"[2] projected by our minds, i.e., our *self-identity*?

The problem is not only ontological and cognitive in nature – it is more anthropological, existential, social, and therapeutic. Philosophical anthropology used to formulate it with the Kantian question "What is man?" According to Robert Loaden, Kant's approach to the human being put an end to "scholastic anthropology,"[3] as it was useless for modern humans who had to revise their concept of human nature after the discovery indigenous nations with their different multicultural identities. However, Kant's concept of man as an autonomous *subjectivity* delivered a powerful counterbalance to reductionist concepts such as that of La Mettrie (*L'homme machine*, 1747).

In contrast to these approaches, phenomenological and hermeneutical philosophy rather asked 'Who am I?' – as a unique human being with interiority (mental life) and exteriority (corporeality, embodiment). Finally, analytical philosophy proclaimed non-egological and conceptions of the self.[4] Contemporary transhumanist scholars seem to follow Peter Strawson's concept, as they have begun talking about "postpersons" (Julian Savulescu) and post-selves in a radical human enhancement context. "We are not essentially selves (. . .) Being a self is

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1   See Terry C. Muck, "After selfhood: Constructing the religious self in a post-self age," *Journal of the Evangelical Theological Society* 1998, vol. 41, no. 1, pp. 107–122.

2   Dan Zahavi, *Subjectivity and selfhood. Investigating the first-person perspective,* Cambridge, MIT Press, 2005, p. 111.

3   Robert B. Loaden, "Anthropology from a Kantian point wof view: Toward a cosmopolitan conception of human nature," *Studies in History and Philosophy of Science* 2009, vol. 39, p. 516.

4   Peter F. Strawson has pioneered the analytical deconstruction of realistic self in: P. F. Strawson, *Individuals*, London, Methuen, 1959.

just a 'phase' we pass through, like being adults. Nothing psychological is neces-
sary for our existence,"[5] Ingmar Persson argues.

But next to such reductionist or even nihilist claims as those of Persson,[6] one can
still find grounds for a non-reductionist, or at least a moderate conception, of the
self. Without a doubt, Paul Ricoeur, Owen Flanagan, and Dan Zahavi contribute
to this conception: "it is undeniable that the self plays a crucial role in our psy-
chological and social life by giving it organization, meaning, and structure."[7] Those
authors are not the only ones: the return to the non-reductionist self can also be
supported by the naturalistic arguments found in the works of all those scholars
who shifted the paradigm of selfhood from *owning a body* to *be (own) a body,* i.e. to
be an *embodied self.* St. Aquinas belongs to this camp: "the union of body and soul is
certainly a natural one, and any separation of the soul from the body goes against its
nature and is imposed on it. So if a soul is deprived of a body, it will exist imperfectly
as long as that situation lasts (...) Platonists who (...) believed also in reincarnation,
though that is heresy (...) Secondly, what human beings desire by nature is their own
well-being. But a soul is not the whole human being, only part of one: my soul is not
me."[8] St. Aquinas' position breaks with the tradition of St. Paul, which neglected the
body as a contingent phenomenon that only disturbs one's relationship with one's
true non-egological self, of Oriental provenience.

How far can the self be approached as something *experiential* and not substan-
tial, and which kind of experience would provide such a recovered concept of the
self with enough evidence? This is a difficult question, because re-identifying
oneself (*idem*) again and again, persisting, remaining identical (*ipse*) without
becoming estranged to oneself[9] seems to be impossible in our auto-creative,

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5   Ingmar Persson, "Why we are not identical to things of any kind," in: Galen Strawson
    (Ed.), *The self,* Malden, Blackwell, 2005, p. 27.

6   See also Daniel C. Dennett, "The self as the center of narrative gravity" as a useful fic-
    tion, in: F. S. Kessel *et al.* (Eds.), *Self and consciousness: Multiple perspective*, Hillsdale,
    Erlbaum, 1992, pp. 103–115.

7   D. Zahavi, *Subjectivity and selfhood*, p. 112; also Owen Flanagan, *Consciousness
    reconsidered*, Cambridge, The MIT Press, 1992.

8   Aquinas, *Selected Philosophical Writings*, Ed. T. McDermott. New York, Oxford
    University Press, 1993, p. 192.

9   See Jean Améry, *On aging: Revolt and resignation*, trans. J. D. Barlow, Bloomington,
    Indiana University Press, 1994; and its 2nd German translation as *Sich fremd werden*
    (or "becoming exteriorized," as Roy Ben-Shai explains, see "Imposition, or writing
    from the void. Pathos and pathology in Améry," in: M. Zolkos (Ed.), *On Jean Améry.
    Philosophy of catastrophe*, Lanham, Boulder, New York, Toronto, Plymouth, Lexington
    Books, 2011, pp. 109–135.

auto-poietic and highly technological lifeworld. Humankind never had so many techniques to enhance and modify *herself*, not only to adapt the world for its habitat. Natural evolution did not assign any special life niche for humankind. They have to create their artificial "life field"[10] (*Lebensfeld*) on their own, using their intelligence, freedom, language, technology etc. Their ultimate end is not culture as a "second nature" corresponding to their peculiar needs (*der Mensch als biologisches Sonderproblem*). They are unable to restrain their creative drive. Their technopoietic activity became autopoietic a long time ago: with ambivalent implications for selfhood and identity. It is not just the ship of Theseus but humans themselves who confront more and more advanced technological improvements today. Before introducing them more systematically and showing their effects on self and identity, one more anthropologist should be mentioned here.

Hans Jonas describes the ambivalent effects that technology and technological freedom have on identity and selfhood, which he conceptualized in a naturalized, but non-reductionist way. Jonas defended the self, even in simple living organisms. In the case of human beings, the potential of their selfhood is open-ended and should remain so, he argues. So asking "who do I want to become?" – which is also a great subject of the philosophy of life and hermeneutics – should be accompanied by responsibility for one's self and identity. Interpreting Jonas' imperative of responsibility in such a context suggests that self and identity are meaningful. In other words, they are values with some autotelic aspect. The latter is to be understood as a solely human, open-ended potential which should remain out of the reach of determination and power of all kind. Even one's own freedom might produce power and oppression, and that occurs by means of technologies, Jonas claims. He argues that there are many reasons to be concerned about the condition of the self during the age of excessive technology use. The contemporary narrative self-conceptions seem to respond to Jonas' concern, for example with Dieter Thomä's question "how am I doing"[11] (*wie geht es mir*) as it combines experiential and therapeutic aspects with a first-person perspective and the careful relation to one's own self. It is experiential because no one can respond to it without drawing from self-experience and socially mediated self-experience; and it is potentially therapeutic because it

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10   That originally Nietzschean view was developed by the German anthropologist Arnold Gehlen in *Der Mensch. Seine Natur und seine Stellung in der Welt,* Wiesbaden, Aula Verlag, 1986.

11   Dieter Thomä, *Erzähle dich selbst. Lebensgeschichte als Philosophisches Problem*, Frankfurt am Main, Suhrkamp, 2007, p. 214.

searches for an authentic *self*-experience in a world becoming increasingly artificial, virtual, and fictional.[12] As Maurice Merleau-Ponty warned decades ago, it is our "thinking 'operationally' which has become a sort of an absolute artificialism, such as we see in the ideology of cybernetics, where human creations are derived from a natural information process, itself conceived on the model of human machines."[13]

As will be shown below, Jonas' methodology still represents the phenomenological tradition, but also provides evidence for biological and experiential foundations of selfhood. If "an *absolute* self-reference"[14] is quite impossible, humans can at least refer to their living and lived embodiment instead.

Association, disintegration, and "self-negation" were diagnosed as traumatic symptoms of the late modern age by Anthony Giddens[15] and the Polish post-war psychologist Kazimierz Dąbrowski. The Holocaust survivor Jean Améry described "the *loss* of the position of selfhood"[16] as a catastrophic existential experience. There is something paradoxical in the modern dialectics of self-negation and self-affirmation. Apparently, when they are existentially endangered, confronting a cultural crisis or clash, human beings show more interest in strengthening their selves and identities.

The same can be observed in the recent age of radical human enhancement when humans started facing their *posthuman* or *transhuman* future. But technological developments and critical discourses are not enough to provide the contemporary (and still) human condition with sufficient support. It is the philosophers' task to resume the search for adequate – and affirmative – narratives, supportive discourses, and therapeutic tools. They cannot be the

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12 About robotic self, see D. Zahavi, *Subjectivity and selfhood*, p. 111.

13 Maurice Merleau-Ponty, *The primacy of perception*, Evanston Ill, Northwestern University Press, 1964, p. 164.

14 ". . . *identity* is not a kind of reference. In fact, identity is – from the viewpoint of the Tractarian philosophy – nothing, i.e. nothing that can be said, although we are subject to the illusion that 'identity propositions' may have a content (that's why identity is 'the very devil')," Guillaume Decauwert, "Saying and showing," *Analysis and Metaphysics* 2013, vol. 12, p. 95; for counterarguments see Sydney Shoemaker, "Self-reference and self-awareness," *Journal of Philosophy* 1968, vol. 65, pp. 556–579.

15 See Anthony Giddens, *Modernity and self-identity. Self and society in the late modern age*, Cambridge, Polity Press, 1991.

16 "It is neither positive nor negative, but *im*-positive: a hybrid," R. Ben-Shai, "Imposition, or writing from the void: Pathos and pathology in Améry", p. 121.

same as discourses with universalist claims,[17] which assert that the essentials of humanity and human nature endangered by advanced technologies and progressive cultures. Despite the fact that humanity's survival relies on technological progress, it is neither humanity nor human nature, but rather an individual human that experiences – but not necessarily "has!" – her outdated corporeality and being-in-the-world and tries to update herself. Those two phenomena: one's own changing condition and the world changing faster and faster have only been sparingly problematized by scholars exploring the "no-self-self."[18] Simone de Beauvoir was one of the last authors who thematized being-in-the-world as the *proper* phenomenal field, as an interactive sphere in which a human being experiences the loss of the self. She said that the ability to experience oneself increases in line with age, but that kind of aging may affect everybody regardless of her metrical age: "According to de Beauvoir, for the elderly man who lives in a world that is changing fast, it becomes easy to find himself out-of-date, useless (…) unproductive,"[19] socially estranged and unattractive. To summarize: we grow old living faster in a world that is changing fast. In the past, there were technologies of the self[20] (or self-examination) developed to integrally strengthen the human self.[21] Today advanced technologies are being developed to recover,

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17 According to Foucault, whose diagnostics of the splits of the self is partially outdated, humanism "presents a certain form of our ethics as a universal model for any kind of freedom. I think that there are more secrets, more possible freedoms, and more inventions in our future than we can imagine in humanism as it is dogmatically represented (…) Through these different practices – psychological, medical, penitential, educational – a certain idea or model of humanity was developed, and now this idea of man has become normative, self-evident, and is supposed to be universal. Humanism may not be universal but may be quite relative to a certain situation. What we call humanism has been used by Marxists, liberals, Nazis, Catholics…," Martin Rux, "One truth, power, self: An interview with Michel Foucault," Oct 25, 1982. In: M. H. Luther et al. (Eds.), *Technologies of the self. A seminar with Michel Foucault*, Amherst, The University of Massachusetts Press, 1988, p. 14.

18 T. C. Muck, "After selfhood," p. 113.

19 Daniela Marinova, "Cultural alienation in the aging person," *Psychological Thought* 2013, vol. 6, no. 2, p. 268.

20 See M. Foucault, "The technologies of the self," in: M.H. Luther et al. (Eds.), *Technologies of the self. A seminar with Michel Foucault*, pp. 16–49.

21 "There are three major types of self-examination: first, self-examination with respect to thoughts in correspondence to reality (Cartesian); second, self-examination with respect to the way our thoughts relate to rules (Senecan), third, the examination of self with respect to the relation between the hidden thought and an inner impurity. At this moment begins the Christian hermeneutics of the self with its deciphering of

rejuvenate, or to enhance manifest abilities, traits, qualities, and areas of the self.[22] We are able to track the manifest results of those interventions. What we cannot track, it is the hidden after-effects, spiritual, artistic, and metaphysical in their nature. This, however, is nothing novel in humankind's history. In this sphere, we always already constructed, deconstructed, and reconstructed, idealized, deluded, and disenchanted *ourselves.*

Scholars who incline towards naturalized, but non-reductionist phenomenology and philosophy of mind employ some methodologies to approach selfhood, even in the unfavorable opportunities of today. They propose "a representationist and functionalist analysis of what a consciously experienced first-person perspective is"[23] when a human psychosomatic condition confronts radical changes. Among the three core theories of the self, e.g., the Kantian-Husserlian transcendental, the Ricoeurian permanently re-storied ego (be it a string-like or stringless series of biographical episodes),[24] and the naturalized but non-reductionist phenomenological approach to "the Self as an experiential dimension,"[25] the latter offers the most impressive and still underexplored heuristic potential. However, in this book, I will be drawing on all three theories to justify the notion of the self. Undoubtedly, not all mature and clinically sane persons show a conscious, existential, or psychological requirement for being a diachronic *self,* as Derek Parfit expresses it in reference to his own biographical experience, e.g. as an "episodic"[26] self embodiment.

But let's speak in the name of those who permanently recover, reidentify and reconfigure them*selves*, balancing between experiences that synchronize mental states with the experienced world. Scholars are focused on such questions as "what is the relation between the reality of experience as we have it from moment to moment and physical reality as we take ourselves to know it in everyday life

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inner thoughts." Foucault explains several technologies of the self including Syrian, Hellenistic, Roman, Monastic, Cartesian, Puritan etc. technologies of the self. Today we do not have neither *meditatio* (imaginative training of the self) nor *gymnasia* ("training in a real situation"), p. 36.

22 See Stephen L. White, *The unity of the self*, Cambridge, The MIT Press, 1991.

23 D. Zahavi, *Subjectivity and selfhood*, p. 101.

24 See Galen Strawson, "Against narrativity," in: G. Strawson (Ed.), *The self?*, Malden, Blackwell 2005, pp. 63–86.

25 D. Zahavi, *Subjectivity and selfhood...*, p. 104.

26 Derek Parfit, "Personal identity," in: Jonathan Glover (Ed.), *The philosophy of mind*, Oxford, Oxford University Press, 1976, pp. 142–162.

and in science?,"[27] while medical professionals, therapists, and their patients are concerned with crisis, disintegration,[28] or, at least, with tension between actual and ideal, past and future selves, between statics and dynamics, sameness and otherness, identity and alterity:

> Despite the fact that he is always the same (he has the same name, and the same identity), the individual is the subject of life pressure, of the bios- and of the socio- that uninterruptedly contain and modify him (physically as much as psychically). We have, therefore, identity and change, constancy and modification, oneness of the being and yet plurality of its aspects, as attributes of the individual unavoidably defined as oxymoronic. This had been presented, with its characteristic share of comic, in 'Our Relations' film, starring Oliver Hardy and Stanley Laurel. Meeting, at an adult age, his twin brother – Alf (who noticed how much Stanley changed), Stanley replies: 'You've altered too, but you haven't changed a bit.' We are and we are not the same, we keep changing but we keep our identity despite the more or less elective tropisms. In the end, the concept of the individual affords only one theme, a paradoxical one: the same and always different, recognizable despite the ceaseless transformation.[29]

Being the youngest link of natural evolution, humankind has some strengths, but also some deficiencies when compared to other species. It has no predetermined habitat. Rather it is ubiquitous but, at the same time, forced to create own artificial habitat by means of *techno-poiesis.* In turn, creative activities and technologies are constantly changing the human condition itself. The original potentialities of the human are to be enhanced and reinforced by technologies, including biomedical ones. Still, the biological life we share with other living beings remains vulnerable and mortal. Fluid changes caused by countless interfering factors demonstrate that vulnerability. Both changes and vulnerability can be observed and involved in one's psychosomatic biography:

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27 "(...) the terms 'mental' and 'physical' undoubtedly have a correct application to phenomena that we encounter in everyday life. For they undoubtedly have a correct use as applied to such phenomena, and it follows immediately that they have a correct application to–that they really mean or denote–phenomena that we encounter in everyday life (...) Hence reality is certainly both mental and physical in its essential nature," as Galen Strawson puts it. His argument will support my own, postdualist view on the embodied self and its biotechnological peregrinations, as shown in subsequent chapters, see Galen Strawson, *Mental reality*, Malden, The MIT Press, 2010, 2nd edition, pp. 44–48.

28 Also Ewa Nowak, "Podmiot jako pacjent chroniczny," in: Adriana Warmbier (Ed.), *Spór o podmiotowość: perspektywa interdyscyplinarna*, Kraków, Księgarnia Akademicka 2016, pp. 207–224.

29 Zeno Gozo, "Interiority and exteriority. Searching for the self," *Philobiblon* 2015, vol. 20, no. 7, pp. 319–333.

> (…) my body has changed remarkably in just the past few months. I make sense of these experiences by imaging that my embodied mind is embedded in a series of bodily states, and that I have the capacity to go from one 'still photo' sense of myself to the next (…) The Self changes as the body changes, and so alas, the Self for the most part dies when the body dies.[30]

Regarded as a finished "series" of interrelated bodily and mental states, the self shows its permanent dynamics. These dynamics gain even more complexity when the embodied self confronts the technological enhancement offered nowadays to make the vulnerable and mortal human condition transhuman resp. posthuman. There is no doubt that modifications of that kind will affect human self-identities throughout life. Disintegration, traumatic and schizophrenic-like symptoms, limited autonomy, and authenticity are just the first problems to mention here.

Objectives

But can such a dynamic entity as the *self* be fostered to deal with radical technological transformations? Can she draw from her chronic crisis? That is the core issue of this book.

The book contains six chapters, which are guided by the following questions: What kind of the self-identity would best cater to subjects' needs in the era of radical auto-technopoiesis, and increasing interest in posthumanist experience and metahumanist manifestos? Does it make sense to consider a posthuman self-identity as a next 'developmental' stage of self-identity known to human beings[31] (Chapter I). Weaving between critical narrative concepts of the self and the embodied self as being the most applicable in the light of advanced technologies, a presentation of how conceptualizations of the human body have evolved across disciplines follows (Chapter II). The question of how technologies can affect and change one's representations of one's own body and its functionalities is examined in Chapter III. On the one hand, humanity is familiar with changes and modifications of the individual self-image and self-representation, caused by such experiences as using instruments that are extensions of their embodied intelligence, confronting disabilities, transplants, and bionic prostheses – an issue which is also explored in the third chapter. However, on the

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30 Robert Pollack, "The embodied self," *Columbia Journal of Gender and the Law* 2013, vol. 27, no. 1, pp. 38–39.
31 See Jaime de Val, „Metahumanism Manifesto – Metabody Projects," retrieved from https://metabody.eu (on 21 December 2019).

other hand, in terms of their vulnerable psycho-somatic conditions, human beings can easily be affected by macro- and micro-technologies, including psychosurgery and man-computer interfaces. The outcomes deeply revise the sense of their autonomy and authenticity, which is essential to remaining themselves, as is shown in Chapter IV.

Dealing with technopoiesis and permanent changes, individuals are prone to the disintegration of their self-identity. The health services, which are technicized, contracted, increasingly based on algorithms supported medical diagnostics and treatment, show not only less and less humanism, but also little interest in promoting the agential potentials of subjects, and the latter are becoming passive (*patient-like*, in terms of both phenomenology and medicine). Do subjects have any means of strengthening auto-therapeutic strategies at their disposal, such as those offered by medically and psychologically engaged phenomenology? Chapter V deals with this and related issues, however, without questioning the benefits of evidence-, technology-, and efficiency-based treatment. The point is rather to re-empower the agential aspects associated with being an autonomous decision maker and informed user of the technologies that make us passive.

Chapter VI deals with the following issue: if designing intelligent and autonomous machines will be successful, will humans be able to face their 'alter-egos' in their artificial fellow humans – and can they rely on cooperation and socialization within a socio-moral environment that would involve both natural and artificial humans?

To work out and discuss arguments which provide answers to these questions, cross-disciplinary methods are provided and applied.

Methods

Chapter I draws on psychological (developmental or 'evolutionary', as Robert Kegan would put it), phenomenological, narrative and post-narrative theories of self-identity to select and examine their properties withstanding with new posthumanist challenges. In the same chapter the concept of the embodied self pioneered in the 20th century by Maurice Merleau-Ponty in phenomenology, and by Anthony Giddens in sociology, is then adapted and reinforced in Chapter II, in which the evolution of body conceptualizations in the 20th and 21st centuries (including living organism, lived body, intercorporeality and the 'new materialism') will be selected as combining ontological, experiential and cognitive potentials most challenged by technologies. Among others, Hans Jonas' theory of the individual and autonomous organism and Margrit Shildrick's concept of crosscorporeality reveal their usefulness in defining the embodied self in terms

of its simultaneous vulnerability and plasticity. Advanced macro- and micro-technologies take advantage of our material conditions (also at the molecular level), that is, through exploiting their accessibility and plasticity, also to effect and modify our minds. One of the last efforts made to protect our vulnerable internal life with bodily 'exteriority' was that of Emmanuel Levinas. But advances in the theory of embodied mind and self seem to make both, 'interiority' and 'exteriority', defenceless when confronting advanced technologies. However, this book addresses the re-empowering of the self (or self-identity) rather than disempowering or banning technologies from our lives. We need to develop ourselves, so we need technologies by means of which beings can achieve their human becoming (*Menschenwerdung*[32], as Paul Alsberg puts it) according to their specific, human-developmental principle, which as yet does not seem to have been achieved.

To advocate for the hypothesis according to which body image and body schema show plasticity (Chapter III), theoretical and experiential arguments were drawn from Hans Jonas' and Arnold Gehlen's philosophies of technique, and from the contemporary findings of philosophy of mind and post-phenomenology.

In Chapters I, III and IV, the symptoms of technological interventions in human embodied self are discussed on the basis of clinical examples reported in medical literature and analysis of modern phenomenology and philosophy of mind (Chapter I presents three cases of radically transhumanist crisis drawn from F. Kafka and T.J. Brown). 'Embodied technesis', partial body representations, anomalous self-experience, facial allograft self-experience, and the social imaginaries of abled and disabled bodies, were analysed and illustrated. As such clinical evidence (which is different than the visions offered by posthumanist and transhumanist authors) is not easy to access, despite the large amount of litera-ture reviewed for this study, two additional surveys with Polish and international participants were conducted in order to predict social preferences with regard to the 'posthuman' embodiment, as well as towards the postconventionalization of persons with disabilities. The findings are reported and discussed in Chapter III. In Chapter IV, the documented results of neuro- and psycho-enhancement are critically discussed.

In Chapter V, four phenomenological and psychological concepts of empowering our agential 'self' as a remedy against the negative effects of rad-ical technopoiesis are applied, namely those developed by Hans-Georg Gadamer, Bernhard Waldenfels, Kazimierz Dąbrowski and Antoni Kępiński. Autotherapy

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was redefined in terms of hermeneutics and dialogics contributing to the positive disintegration (Dąbrowski) and learning from crisis (Kegan). This complex methodology was elaborated as a component of the self-recovery concept, which offers an alternative to narrative theory and the fate of "post-persons" or "post-humans" assigned to humanity by the proponents of so-called posthumanism.

Finally, to thoroughly examine whether autonomous artificial intelligence equipped with moral and ethical 'software' could provide alter egos and social environments that are compatible with the socialization of human beings (or at least socially safe), the leading approaches to moral machines were revisited and discussed. The hypothesis of social robots provided with the cognitive skills necessary to make decisions based on the categorical imperative procedure would be the most radical, as that procedure was related to a transcendental principle and a moral metaphysics unavailable for intelligent devices. As humans and machines do not share abilities and principles of that kind (neither do they share affects and emotions which cannot be disconnected from their physiological, experiential or evolutionary foundations), the nature of socialization and self-identity development within an intersubjective exchange between human and non-human intelligence requires novel conceptual tools which as yet do not exist.

Acknowledgments

I. Kinds of the Self

> *"What is unique about the I hides itself exactly in what is*
> *unimaginable about a person. All we are able to imagine*
> *is what makes everyone like everyone else, what people*
> *have in common. The individual I is what differs from*
> *the common stock, that is, what cannot be guessed at or*
> *calculated, what must be unveiled, uncovered, conquered."*
>
> *Milan Kundera, The Unbearable Lightness of Being*

The concepts of self and identity are constantly evolving, and their ambiguity manifests itself as both the tendency to preserve and to release the bonds of self-identity, or at least to change it. The complexity of sociocultural environments and the increasing effect of technologies on our day-to-day life facilitate that change or even lead to a process of permanent half-life (crisis) emerging within one's self-identity. The issue here is not just postmodernity introducing deconstruction and diffuse, instant, and puzzling concepts of the self as a result of this deconstruction. What we are concerned with is the intrinsic and extrinsic processes for which we need more capacious concepts than those available in traditional, pre-modern psychologies and philosophies. Non-egological and post-egological self-identity concepts (e.g., intersubjectively mediated, extended, ecological, shared, episodic vs. diachronic, embodied, etc.) seem to better approach "a new sense of self"[33] than, e.g., Kant's concept of the transcendental "I." Complexity challenges individuals from both the outside and inside. However, their 'new' self-identity need not be that complex for individuals to voice who they are under new circumstances, such as in dealing with the increasing effect of technologies on them. The new concepts should be explorative and offer some developmental potentials. Therefore, static sociological terms such as the agents and actors of a network, or discursive inter-subjects, will be revisited here only occasionally, in specific contexts, for instance, self-therapeutic strategies to empower the agential aspects of the "me," which is passive. If our selves really evolve – and in 1991 Giddens suggested they do – the following question would arise: are the traditional directions of that evolution, such as development,

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33 A. Giddens *Modernity and self-identity*, p. 11.

maturation, flourishing, balance, etc., its final destination, or is there a very different phenomenon, for example, a permanent, positive disintegration of self-identity? Whichever of these directions would be expected to be the individual's last destination, they all show a conventional, normative and normalizing character, as they seem to elevate the individual, thus carrying them from their chaotic condition to that of organization, coherence, structure, strength, and mastery, or maturity or adulthood in terms of the life-span. But not all recent concepts of the self would offer recovery, empowerment, diachrony, teleology, wholeness, or, put briefly, *growth*. Rather, *regression*, fragmentation, "deskilling," or "insanity"[34] are descriptive or normative expressions increasingly used to approach present-day self-identities; in particular, those influenced by technological factors. But diagnoses like these are already available. Therefore, searching for a new concept of the self should result in some epistemological and ontological security, and also guidance, in the light of a chronic crisis of the self,[35] and chronic disagreement between experts and therapists, as well as the immediately involved. To show their security potentials – as, e.g., vehicles of possible self-development, self-reconstruction, self-recovery, and self-strengthening, etc.–the limitations of these concepts must also be pointed out. Certainly, the narrative self and the embodied self belong to the most fashionable and most discussed contemporary concepts; the former because of its integrative properties, the latter because of its integral ones, and both because of their developmentalism.

1. Developmental Psychology Meets Phenomenological Psychology[36]

Developmentalism is one of the most powerful paradigms in contemporary cognitive psychology. Its original proponents were Jean Piaget and Lawrence Kohlberg. Their four- and six-stage theories of personal cognitive development, encompassing socio-moral growth, inspired a number of scholars who continuously developed the developmental approach. Searching for the trajectories of personal self-development, scholars such as Robert Selman and Robert Kegan (both developmental psychologists), Anthony Giddens (a sociologist) and Ken Wilber (a philosopher and theorist of integral human growth) also elaborated

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34 A. Giddens, *Modernity and self-identity*, pp. 138–159.

35 A. Giddens, *Modernity and self-identity*, pp. 138–159.

36 "Phenomenological psychology is distinguished in all its characteristics from introspective psychology," Maurice Merleau-Ponty, *The phenomenology of perception*, London, Routledge & Kegan Paul, 1962, p. 52.

inter-, intra- and transpersonal "stages" of individual self-development.[37] Wilber's inclination to spiritualism and esoterism made serious reception of his developmental model impossible. But reading the developmental manifestos of the theorists of posthumanism, their esoteric character can be noted, too: "the human desire to acquire new capacities (...), to expand the boundaries of our existence"[38] is rooted in a religious "quest to transcend our natural confines...:"[39]

> Neither heavenly nor earthly, neither mortal nor immortal have We made thee. Thou, like a judge appointed for being honorable, art the molder and maker of thyself; thou mayest sculpt thyself into whatever shape thou dost prefer. Thou canst grow downward into the lower natures which are brutes. Thou canst again grow upward from thy soul's reason into the higher natures which are divine[40].

But the following book (with some critical exceptions such as Agamben's and Lingis' adoption of the "glorious" approach) does not explore esoteric and eschatological explanations[41] of the human self's posthumanist evolution (with its related perturbances). Instead, it draws on developmental and phenomenological psychology, the philosophy of biology, and philosophy of mind to examine posthumanism's cognitive and experiential –and thus naturalist – foundations, including the new materialism theory as a posthumanist extension of the Embodied Self Theory. Developmentalism belongs to them, and its rise is parallel to the rise of the phenomenological theory of intercorporeality with its most recent, posthumanist ontologies.

Kegan's construction of the evolving self concerns human growth in connection with the understanding of reality. Over time, across five developmental stages, a transformative learning process occurs. This process changes the way we know

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37 Ken Wilber's core works *Integral psychology* and *A Theory of everything* were first celebrated as resolving the body-mind problem on the basis of integral realism.

38 Nick Bostrom, "A history of transhumanist thought," *Journal of Evolution and Technology* 2005, vol. 14, no. 1, p. 1.

39 N. Bostrom, "A history of transhumanist thought," p. 2.

40 Giorgio Pico della Mirandola, *On the dignity of man*, Cambridge, Indianapolis, Hackett Publishing Company, Inc., 1965, p. 5.

41 For a critical approach to eschatological and also racial myths on human development, see Ewa Nowak, "Now choose life, so that you and your children may live. Eschatology of perfectibility, niddah, and the scandalon of race hygiene at 1850–1945," *Ethics in Progress* 2016, vol. 7, no. 1, pp. 103–117 (in Polish; one of the outcomes of this research project), doi: 0.14746/eip.2016.1.6. For a critical approach to maldevelopment myths founding disability concepts see idem, "Anthropology and disability. The origins, shift and revival of the paradigm," *Ruch Filozoficzny* 2017, vol. LXXII, no. 3, pp. 137–157 (in Polish).

and understand things,[42] in terms of objective reality and our relations with objects. "We *have* object; we *are* subject,"[43] he claims. Objects are "those elements of our knowing or organizing that we can reflect on, handle, look at, be responsible for, relate to each other, take control of, internalize, assimilate, or otherwise operate upon,"[44] e.g., identify with them, and, finally transform the distinction between subjectivity and objectivity. In particular, we cannot reflect upon the subject and the self without focusing on self-complexity, and the focus itself must coordinate different perspectives of consciousness. As Kegan's perspectivism theory shows affinities with that of Kohlberg and Selman, and all these theories are well known, it would be sufficient to refer to the fifth-order consciousness, which Kegan describes as the most integrative – i.e., integrating the self and the other – and, therefore, as "self-transformational." It is the other and the otherness that reorients one's feeling of self from particular, ego-centered identity. The cognitive-structuralist approach to self-development corresponds with the phenomenological and the narrative approach of the self that is experienced or storied from the first-person perspective, and which needs to be complemented with the third-person perspective (the so-called objective perspective). However, integrating the self and the other, which was explored by Kegan at the level of conscious and subconscious (deep level) cognitive operations, found its "partner" in Merleau-Ponty's phenomenology of the experience of one's self as always already embedded in the world and not even related to the world. Contemporary phenomenological and cognitive concepts of the self, i.e., post-egocentric and thus extended, shared, allocentric and ecological, including the embodied self, seem to be extrapolations of the classic, self-developmental theory proposed by Kegan, especially because of the balance between egocentric and allocentric aspects of self-identity, which involves realism; meaning realism of the physical/material, social, or epistemic environment[45] with which one has relations.[46]

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42 Robert Kegan, *In over our heads: The mental demands of modern life*, Cambridge, Harvard University Press, 1994, p. 17.

43 R. Kegan, *In over our heads*. . ., p. 32.

44 R. Kegan, *In over our heads*. . ., p. 32.

45 The egocentrism-allocentrism dychotomy is also explored in the phenomenology of spatiality and self-awareness, see Dan Zahavi, *Self-awareness and alterity*, Evanston, Northwestern University Press, 1999; also Shaun Gallagher, "Review: Complexities in the first-person perspective. Reviewed work: *Self-awareness and alterity* by Dan Zahavi," *Research in Phenomenology* 2002, vol. 32, pp. 238–248, as well as in the new environmentalism and dialogue ethics.

46 "*We begin not with thoughts but with our body's engagements with the earth* – with intercorporeal activities," Kenneth Liberman, "An inquiry into the intercorporeal

Developmental cognitive models of consciousness and embodied consciousness, and cognitivist models of mind and embodied mind inspired by Francisco Varela's et al. *The Embodied Mind,*[47] seem to be equally supportive, as long as one is considering self and identity in terms of human beings. As the title of this book claims (as does the core thesis of the related research project), post*humanism* and trans*humanism* emerge from the very foundations of humanism, such as a human being' self-transcendence, human growth, development (evolution) of their identity, and even from their embodied self. Confirming that thesis through the suitable arguments is one of the aims of this book. Phenomenological and hermeneutic theories demonstrate this argumentative potential, as they do argue there are indissoluble interrelations between mind (conscious and unconscious) and body. They also support the concept of the experiential and cognitive horizon (field), which allows one to conceptualize those kinds of trans- and post-human agents that distinguish themselves by phenomenal features such as extended, ecological, intercorporeal, and crosscorporeal self-identity. Here, these features will be defined as representative for the posthumanist "stage" of human development. Agents exhibiting these features are to be defined as autopoietic or techno-autopoietic systems that are extended, ecological, intercorporeal, etc., in as much, as our 'extensions' may be artificial, not only natural (environmental). "Relational holism"[48] and inclusive, high-complexity, autopoietic dynamical systems are thinkable as one of the implications of these features which originate from the embodied self. Because these implications may involve not only interpersonal (social) relations but also certain relations with realities such as animals, artificial devices (prostheses, implants), allografts, virtual realities and a variety of techniques called 'enhancements' or 'enhancers,' sharp boundaries between the "human" and "posthuman" have yet to be specified.

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relations between humans and the Earth," in: Suzanne L. Cataldi and William S. Hamrick (Eds.), *Merleau-Ponty and the environmental philosophy*, Albany, State University of New York Press, 2007, p. 41.

47   Francisco J. Varela, Evan T. Thompson, Eleanor Rosch, *The embodied mind*, Evanston, The MIT Press, 1991.

48   Evan T. Thompson, Francisco J. Varela, "Radical embodiment: neural systems and consciousness," *Trends in Cognitive Sciences* 2001, vol. 5, no. 10, p. 420.

2.   The Embodied Self

The embodied self and the embodied mind belong to the most influential concepts for thinking about the human being beyond the body/mind dualism, and to adapt the embodiment as a precondition of experiential and cognitive processes. At the same time, both concepts refer to the interplay (interrelations) between cognition and its natural (physical, biological), social, artificial, symbolic, digital, etc. environments. As will be shown in the chapter "The Kinds of the Body," the embodied self concept applies to a wide spectrum of entities, including micro– and macro-organisms, living and artificial beings. The concept is rooted in Maurice Merleau-Ponty's double thesis, according to which 'I am by body' and 'I have my body.' Asking provocatively, "Is our body our self?,"[49] Varela et al. try to show that our bodily reality, our embodied self – thus, natural, sensing, functional – is not less dynamic than our mind. In fact, body and mind are, to a great extent, engaged in the same, unitary, complex, and dynamic psychophysical system: one reality with a multitude and variety of aspects distinguishable for researchers. There can no longer be "an abstract, disembodied observer who (. . .) encounters matter as a separate and independent category."[50] Asking "Is our body our self?," Varela et al. suggest our actual embodiment is even not the only materialization of ourselves. Its temporality and spatiality, related instruments and techniques, activities and interactions, changes and exchanges, nutrition, atmosphere, information – also belong to one's embodiment. The entire experiential horizon and the entire experiential and perceptual pattern are centered on the body. It is subjective, but also objective; it is mine, but not only mine. There is mind if–and only if–there is a brain and a peripheral neural network making the embodied me interconnected with the world around. "I am a body which rises towards the world," as Merleau-Ponty puts it.[51] "Notice that we are not talking about a direction of causality. And we are not dependent on neuroscience to validate experience; that would be scientific imperialism."[52] We can problematize the embodied self in terms of psychology, phenomenology, philosophy of biology, philosophy of technics, the narrative self and literature theory, Eastern philosophical traditions, therapy –and this is what this book does.

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49 E. T. Thompson, F. J. Varela, "Radical embodiment," p. 65.
50 E. T. Thompson, F. J. Varela, "Radical embodiment," p. 64.
51 M. Merleau-Ponty, *The phenomenology of perception*, p. 65.
52 M. Merleau-Ponty, *The phenomenology of perception*, p. 73.

The 'incarnate subject' concept has a long history in cultures, religions, and philosophies. Step by step, the French phenomenologists Malebranche, Maine de Biran, Bergson, and Merleau-Ponty elevated Descartes' "union of the soul and the body"[53] to the paradigm of the self not only embodied but also interconnected with fellow embodied selves and the surrounding reality. "The body is the vehicle of being in the world, and having a body is, for a living creature, to be intervoled in a definite environment."[54] Nowadays, the nature of 'definite environments' is changing. The question of how technologies affect the embodied self is worth examining:[55] Does it co-evolve in parallel with the increasing presence of technologies in our lives and experiential horizons?[56] Or is it suffering from disintegration, losing its agential energy and becoming a *patient*? What exactly within a living organism, body, and embodiment is susceptible to manipulation and prone to techno-poiesis? In this book, the Embodied Self Theory will be predominant as a framework to integrally weigh up all the pros and cons of becoming the thesis 'we, humans, face posthumanism as the next stage of the human development' justified.

3. The Narrative Self

3.1 An Outline of Narrative Theory

Narrative theory belongs to the highly-esteemed (but also highly discussed)highly-esteemed concepts of the self for the highly integrative and therapeutic effects of autobiographical narration, as "the I tells the story of the self and the story becomes part of the Me."[57] Constructing one's own biography by means of a "storied nature of human experience"[58] is the narrative method in a nutshell. Is there no self

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53 Maurice Merleau-Ponty, *The incarnated subject. Malebranche, Biran and Bergson on the union of body and soul*, trans. P. B. Milan, New York, Humanity Books, 2001, p. 34.

54 M. Merleau-Ponty, *The phenomenology of perception*, p. 71 (this quotation will also reappear in the chapter "The Evolution of Body Concept" in this volume, which describes the 'stages' of 'bodily constitution' to show how its identities evolve to achieve what is called today 'posthuman').

55 H. Jonas, *Leben und Organismus*, p. 339.

56 Klaus Kornwachs, "Stanislav Lem: Summa technologiae," in: Ch. Hubig, A. Huning, G. Ropohl (Hg.), *Nachenken über Technik*, Berlin, Edition Sigma, 2013, p. 233.

57 Dan P. McAdams, Ruthellen Josselson, Amia Lieblich, Introduction to: *Identity and story*, Washington DC, APA, 2006, p. 3.

58 D. P. McAdams, R. Josselson, A. Lieblich, Introduction to: *Identity and story*, p. 4.

without narrative? To answer this question, it is worth reiterating how difficult it is to achieve a narratively-managed selfhood in overwhelming experiences.

For Immanuel Kant, first-person autobiographical narratives were "not exactly sources for anthropology" but were "nevertheless aids"[59] in understanding oneself, being understood by other subjects, and getting involved in intersubjective relations. Paul Ricoeur and Hans-Georg Gadamer explored the crucial role of narrative ability for shaping one's individual self. "Being able to say" something with reference to oneself implies referring to oneself as another. This 'another' is being revealed, identified, and confirmed by the "I" that stories and re-stories her life course as a sequence of experiences, both personal and interpersonal, active and passive. To provide a story form for her life, the I must use "a capacity more specific than the general gift of language that expresses itself in the plurality of languages"[60] to report on single, isolated episodes connected by the logical conjunction or grammatical particle ". . . and . . .." (according to "the method of the AND, 'this and then that' "[61]) or ordered consecutively, as in "they do X," "they stop doing X," "they do Y," "they stop doing Y," etc. Storying and re-storying transforms single episodes into a chain of experiences, or into an elaborate composition ("fabric" in English, "Gewebe" in German) filling one's self-identity. Nietzsche pioneered the art of narration as the very source of coherence and meaning, as he was also the discoverer of the crisis of modern subjectivity and selfhood. However, to provide narratives that are both auto-creative and autobiographical with some factual content (still associated by modern societies with truth and authenticity, not just with the originality of the narrative itself), that is, to minimize the effect of confabulation or, by and large, "the competence to style life" (*dieser Kompetenz der Stilisierung des Lebens*)[62] which seem fundamental for artistry,[63] the narrative ability is to refer to a subject's authentic activities, experiences and agential abilities: "By 'being able to act,' I mean the capacity to produce events in society and nature. This intervention transforms the notion of

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59 David Kaplan (Ed.), *Reading Ricoeur* (Introduction), Albany, State University of New York Press, 2008, p. 2.

60 Paul Ricoeur, "Devenir capable, être reconnu," *Esprit* 2005, vol. 7, trans. Ch. Turner. L'Institut Français du Royaume-Uni, p. 1.

61 Doro Wiese, *The powers of the false. Reading, writing, thinking beyond truth and fiction*, Evanston, Northwestern University Press, 2014, p. 24.

62 D. Thomä, *Erzähle dich selbst*, p. 154.

63 In which the illusion effect requires distance to reality (*macht sich jene Kohärenz vom faktischen Lebenslauf los*), D. Thomä, *Erzähle dich selbst*, p. 153.

events, which are not simply what happens. It introduces human contingency, uncertainty and unpredictability into the course of things."[64]

Thus, narrative ability is about the arrangement and re-arrangement of the changeable, fleeting, and instant life occurrences and life experiences of nearly all life spheres in order to provide a diachronic, relatively coherent, legible and meaningful plot, by means of storytelling. This plot will be continuously developed, constantly updated, re-storied, and re-interpreted day after day. A subject's ability to do this is the ability to narrate herself, including her willingness to do this, which Nietzsche considered to be the key form of the will to power. As a consequence, the narrative ability which originates from a subject's life and practical potentials would be empowering to her self-confirmation as an individual. In that sense, one may formulate an imperative of sovereign, auto-biographical narration. That imperative would make the narrator responsible for her self-identity in the ethical perspective inasmuch as she is dealing with the question about her identity, which is not established forever and is far from coherence. Therefore, the narrative theory of the self seems nearly perfectly tailored to meet the need of contemporary humans with their chronic identity crises and, in particular, with their experience of chronic self-alienation.

> 'Being able to narrate' occupies a pre-eminent place among the capacities, insofar as events of whatever origin become legible and intelligible only when recounted in stories; the age-old art of story-telling, when applied to oneself, produces life narratives which the historians articulate as history. Emplotment marks a bifurcation in identity itself – which is no longer merely the identity of the same – and in one's own identity, which incorporates change as peripeteia. One may speak, consequently, of a narrative identity: the identity of the narrative plot that remains unfinished and open to the possibility of being told differently or of letting itself be told by others.[65]

"Composition"[66] emerges from bridging "the episodic dispersal of the narrative and the power of unification unfurled by the configuring act constituting *poiesis* itself,"[67] as the narrative ability is poietic, which also means efficient and causative.[68] "This narrative necessity transforms physical contingency, the other

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64 P. Ricoeur, "Devenir capable," p. 2.

65 P. Ricoeur, "Devenir capable," p. 2.

66 Paul Ricoeur, "Life in quest of narrative," in: D. Wood (Ed.), *On Paul Ricoeur*, London, New York, Routledge, 1991, pp. 20–33.

67 P. Ricoeur, "Life in quest of narrative," pp. 20–33.

68 For the strong connection between action and speech see Arendt: "Action and speech are so closely related because the primordial and specifically human act must at the same time contain the answer to the question asked of every newcomer: 'Who are you?'

side of physical necessity, into narrative contingency, implied in narrative necessity."[69] Despite the limitations of the narrative concept of the self[70] discussed in the next section, in his *Time and Narrative* (III), Ricoeur advocates for the strong narrative concept of the self that "appears both as a reader and the writer of its own life."[71] One of these limitations – especially in clinical contexts – implicitly addresses a self-narrative disconnectedness from empirical evidence which provides the first-person perspective with a private, hermetic, unexaminable sense or truth: "meaning is always emergent, never quite fixed and how, in the ontogenetic process of making meaning over time, knowledge is transformed even while it is maintained. This microhistorical process of genetic epistemology renders each person's ideas unique, even while, from birth onwards, each one of us willy-nilly co-opts to others in making our own sense of the world."[72]

Daniel Dennett's idea of replacing Ricoeur's narrative self-identity with the "center of narrative gravity"[73] was drawn from theoretical physics and biology.

This disclosure of who someone is, is implicit in both his words and his deeds (. . .). This disclosure of 'who' in contradistinction to 'what' somebody is – his qualities, gifts, talents, and shortcomings, which he may display or hide – is implicit in everything somebody says and does. It can be hidden only in complete silence and perfect passivity," Hannah Arendt, The human *condition*, Chicago, University of Chicago Press, 1958, pp. 178–179; and Merleau-Ponty: "Language is a life, is our life and the life of the things (. . .) language is not a mask over Being, but – if one knows how to grasp it with all its roots and all its foliation – the most valuable witness to Being," even when silent, Maurice Merleau-Ponty, *The visible and the invisible*, Evanston, Northwestern University Press, 1968, pp. 125–126.

69 P. Ricoeur, "Life in quest …" p. 142.

70 Some authors argue that "only narrative truth is attained in psychotherapy," Eugene Winograd, "The authenticity and utility of memories," in: Ulric Nesser, Robyn Fivush (Eds.), *The remembering self: Construction and accuracy in the self-narrative*, Cambridge, Cambridge University Press, 1994, p. 244. On the other side, "biographers are well aware that people may "improve" their stories of the past for social reasons." By Wittgenstein the "love of a good story frequently got the better of his concern for accuracy," Michael Ross, Roger Buehler, "Creative remembering," in: U. Nesser, R. Fivush (Eds.), *The remembering self*, p. 214.

71 Paul Ricoeur, *Time and narrative III*, Chicago, The University of Chicago Press, 1987, p. 246.

72 Christina Toren, "How do we know what is true," in: Rita Astuti, Jonathan Parri, Charles Stafford (Eds.), *Questions of anthropology*, Oxford, New York, Berg Publishers, 2007, p. 310.

73 Daniel Dennett, "The origins of selves," *Cogito* 1989, vol. 21, p. 169, also, "Why everyone is novelist?," *The Times Literary Supplement* September 1988, pp. 16–22; and Nicholas

That center would be able to describe one's condition also in terms of a naturalized, embodied self. Dennett's heterophenomenological method additionally reinforced the third-person perspective as a necessary contribution to one's self constitution. "Our fundamental tactic of self-protection, self-control and self-definition – Dennett argues – is not spinning webs or building dams, but telling stories, and more particularly, concocting the story we tell others – and ourselves – about who we are" as "a unified agent whose words they are."[74] However, Dennett's creative agency (though fictional) is able to provide an individual with multiple selves,[75] in the form of "quasi-selves, semi-selves, transitional selves," which would imply a personality disorder from which some contemporary subjects would prefer to be liberated, rather than be inflicted with. But some other subjects were probably satisfied with such and other implications of Dennett's theory, like "the description of the narrative self as the computer software program running on the hardware computer of the brain" allowing "that such a self can survive many physical manifestations. In addition, descriptions that deploy computational language may be more appealing to contemporary readers than the language of souls."[76]

Despite the unexpected multitude of narrative selves (and even narrative gravity centers!), a human brain shows a clear preference for "coherence and single-mindedness to dissonance and conflict,"[77] for causality over passivity, for decision making over arbitrariness, etc. (however, not necessarily a clear preference for reality over fiction). That favored version of me will be stated as my very "real" self, as both authors explain. Why the heterophenomenological or objectively hermeneutical method can be useful in clinical contexts was exactly examined in McCarthy: "gathering the data of first-person reports of conscious

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Humphrey, Daniel Dennett, "Speaking for our selves: an assessment of multiple personality disorder," *Raritan* 1989, vol. 9, no. 1, pp. 68–98.

74 Daniel Dennett, *Consciousness explained*, London, Penguin Books, 1992, p. 418.

75 Although persons with traumatic experiences desperately miss their past identities, having new ones. "I want to write of the pain I am feeling right now, of the lukewarm tears that will not stop coming into my eyes – for what? For my lost breast? For the lost me? And which me was that again anyway...? I want to be the person I used to be, the real me." This is one of the feminist poets who "encourage a multiplicity of selves (...) that touch, meet, cross, and blur according to context must all be given voice," Audre Lorde, *The cancer journals*, San Francisco, Aunt Lute Books, 1978, p. 37.

76 Joan McCarthy, *Dennett and Ricoeur on the narrative self*, New York, Humanity Books, 2009, p. 59.

77 J. McCarthy, *Dennett and Ricoeur on the narrative self*, p. 56.

experience, observing subjects' emotional and physiological behavior, bracketing any worries about the ontological status of the objects of conscious experience, and taking a third-person stance toward the phenomena concerned."[78]

3.2 The Narrative Self in Humanist Clinical Contexts and Beyond Them

Further objections to the narrative approach to an individual self would address:

1. subjects with limited linguistic competence, such as young children yet unable to narrate or to use symbols, complex motions, etc.;
2. subjects suffering from semantic dementia, word-finding difficulties, and agrammatism;[79]
3. traumatized subjects;
4. subjects with neurological impairments or brain injuries;
5. subjects suffering from functional and psychomotor disabilities or from the loss of motor abilities;
6. subjects in a coma and those with conditions such as locked-in syndrome;[80]
7. subjects with posthuman experiences whose narratives are simulated in literary works or fine arts.

These subjects are limited in their effective, narrative, and autobiographical storytelling. Heterophenomenology would not be sufficient for accessing information about who a subject is, and to provide empowering feedback for her. Technological tools such as the brain-computer interface can detect "signs of consciousness,"[81] the meaning and relevance of which can be encoded and interpreted with the help of additional "behavioral assessment" and "volitional"[82] brain activity assessment, which seems to match Dennett's criterion of objective

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78 J. McCarthy, *Dennett and Ricoeur*, p. 66.
79 Sergei V.S. Pakhomov, Glenn E. Smith, Susan Marino, Angela Birnbaum, Neill Graff-Radford, Richard Caselli, Bradley Boeve, David S. Knopman, "A computerized technique to assess language use patterns in patients with frontotemporal dementia," *Journal of Neurolinguistics* 2010, vol. 127, p. 129.
80 Damien Lesenfants, Camille Chatelle, Steven Leureys, Quentin Noirhomme, "Brain-Computer Interfaces, Locked-In Syndrome, and disorders of consciousness," *Médicine/Sciences* 2015, vol. 31, no. 10, p. 904.
81 D. Lesenfants et al., "Brain-Computer Interfaces," p. 904.
82 Dina Habbal, Olivia Gosseries, Quentin Noirhomme, Jerome Renaux, Damien Lesenfants, Tristan A. Bekinschtein, Steve Majerus, Steven Laureys, Caroline Schnakers, "Volitional electromyographic responses in disorders of consciousness," *Brain Injury* 2014, vol. 28, no. 9, p. 1173.

observation. A large number of studies "have concluded that high-level cognition can be observed in the absence of purposeful motor responses, suggesting a potential dissociation between behavioral expression of consciousness and consciousness per se."[83] Also, diagnoses of dementia,[84] neural injuries, and serious mental disorders and related disintegrations, to a large extent require the objective clinical observation of a subject's expressions and behaviors.

Subjects with transplanted or implanted organ,[85] or implanted intelligent devices[86] may also be temporarily disadvantaged in their approach to themselves; however, the problem is not restricted to the narrative self. Radical allograft experiences are documented case-by-case and will be examined in this volume together with experiences with artificial devices. Unlike these cases, the posthumanist experiments seem to be colonized by fictional and utopian narratives offered from scholars' meta-perspectives and literature. Authentic first-person reports on a posthuman self/identity are scarce. There is no certainty as to whether posthuman creatures showed interest in self-identity or were rather satisfied with their post-egological and post-personal existence. However, as long as we are dealing with the originally *human* element in post- or 'neohuman' creatures, interest in self-identity will prevail, at least at "the next ego balance"[87] level. That balance would not necessarily be achieved through the approach of the narrative self, but through the "care of the self" originating from "our capacity to tenderly and lovingly care for the body,"[88] both in silence[89] or in the middle of narratives and discourses.

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83 Dina Habbal et al., "Volitional electromyographic," p. 1173.

84 Stephan Millet, "Self and embodiment: A bio-phenomenological approach to dementia," *Dementia* 2011, vol. 10, no. 4, pp. 509–522.

85 "So brain transplantation, at least initially, will really be head transplantation–or body transplantation, depending on your perspective," Robert J. White, "Head transplants," *Scientific American: Your Bionic Future* 1999, vol. 10, no. 3, p. 24.

86 Frank E. Johnson, Katherine Virgo (Eds.), *The bionic human*, Totowa NJ, Humana Press, 2006; for persons reduced to "commander data" see Sidney Perkowitz, *From bionic humans to androids*, Washington DC, The Joseph Henry Press, 2004, p. 173.

87 Robert Kegan, *The evolving self. Problem and process in human development*, Harvard, Harvard University Press, 1982, p. 104.

88 Audre Lorde, *Sister/Outsider: Essay and speeches*, New York, Crossing Press, 1984, p. 88.

89 See Daniel Hutto, Shaun Gallagher, "What's the story with body narratives? Philosophical therapy for therapeutic practice;" also, "Understanding others through primary interaction and narrative practice," in: Jordan Zlatev, Timothy Racine, Chris Sinha, Esa Itkonen (Eds.), *The shared mind: Perspectives on intersubjectivity*, Amsterdam, John Benjamins, 2008, pp. 17–38; Jan Assmann, "Einführung" in *Schweigen. Archäologie der*

Van den Berg examined the relationship between continuity, discontinuity, and the concept of a self whose coherence and balance were supported by narrative ability, as I tried to show above with Ricoeur and Dennett's narrative theories. If a radical jump from human to posthuman identity implied a decline of the narratively structured self, there would be a radical discontinuity within the latter. However, according to van den Berg, discontinuity paradoxically promises more structure than continuity and homogeneity:

> Discontinuity means: Intransitivity, a jump, a gap, disconnectedness, something accidental and open-ended. This sounds quiet puzzlingly. We are so used to the connectedness and the transition that we are no more able to imagine how can something arise outside connection. It is like an idea left in the air (...) The idea of structure without continuity does not come to our mind. However, one may only talk about the structure when no continuity (...) Continuity makes everything homogenous and nothing is more structureless than the homogeneous (...) Or I expressed it in a wrong way: Conversely, homogeneity implies continuity.[90]

But, still, such implications presuppose basic dialogical relations between myself and someone else in the commitment, trust, and mediation of language.[91] Otherwise, single episodes can "be connected without necessarily being coherent,"[92] but they must be voiced.

3.3 Between Narrative, Silence and Dysnarrativa

Modern-day research findings across cultures raise objections to a structured or even narrated self. One rather "should embrace the significance of the silence (...). Needless to say, as there are various kinds of silence, we must examine its extent and meaning with careful attention (...) Silence that conveys the presence of the 'Nothingness' may well be telling more than any spoken words," whereas "quick verbalization may easily destroy the life of the image."[93] Instead,

> the hidden secrets of silence and non-verbal interaction [are to be explored]. There is a great deal being expressed non-verbally through body movement, facial expression, eye contact, breathing etc. (...) Amplification of the image is usually being unfolded in

literarischen Kommunikation, vol. IX, hg. von Aleida Assmann, Jan Assmann. Munich, Wilhelm Fink Verlag, 2013, p. 22.

90 Jan Hendrik van den Berg, *Metabletica. Über die Wandlung des Menschen. Grundlagen einer historischen Psychologie*, Göttingen, Vandenhoeck & Ruprecht, 1960, pp. 56–57.

91 Rober Kegan, Lisa Laskow Lahey, *How the way we talk can change the way we work. Seven languages for transformation*, San Francisco, Jossey-Bass, 2001, p. 30.

92 D. Wiese, *The powers of the false*, p. 24.

93 Meguchi Yama, "Ego consciousness in the Japanese psyche: culture, myth and disaster," *Journal of Analytical Psychology* 2013, vol. 58, pp. 57–58.

silence, which, of course, is not only true of Japanese psychotherapy but is also the case cross-culturally with practitioners where image is central.[94]

In the Japanese tradition, continuity and continuous self-narratives are not considered as a relevant contribution to the self, as the latter need not to be conceptualized as a unity or diachrony of conscious contents. Kitarō Nishida, who can be regarded as a Far Eastern hermeneutic thinker, held a more daring view called "mu no ba sho." According to this philosopher, the contradictions and dissonances lived or performed by an individual neither presuppose nor imply "an ultimate discretedness"[95] of herself (they do not ruin its coherent representation as one of a synchronic – not diachronic – multitude). "The unity of consciousness, namely the self, is not possible in a merely straight-lined process. All the phenomena of my consciousness are many," Nishida asserts, "and, at the same time – as mine – also one. This is a unity of opposites in the shown sense;"[96] it is likely that it is possible to articulate and story this unity in language, logic, semantics, and narrative forms very different to ours, but probably as open-ended forms. Also, narration, as a tool for giving shape, structure, and content to the human "I," has a completely different meaning in each of these cultural circles. An example of functioning at the interface between these two cultural 'tectonic plates,' which never formed a monolithic continent, if only because they attach very different importance to the role of narrative in defining the self and its vicissitudes, is Megumi Yama, an American psychotherapist with Japanese roots. She examines two completely different models of the self. Each of these models is encased in a strong normativity that has endured for hundreds of years. The Japanese model, an example of "Eastern selfhood," is non-egological, decentered, "speechless," and "blank," while the American model, which is an example of "Western selfhood," is individualistic, centered (egological), permanently storied and restoried. "It is even doubtful" if the Japanese psyche really has a "center" or a "conscious self."[97] The true Japanese "self" is *nothingness* and can be explained using traditional myths, like the one about heavenly ancestors. A person who is asked about their "self," even in a diagnostic or therapeutic context, expresses herself sparingly and cautiously; it is not her who is the main agent,

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94 Meguchi Yama, "Ego consciousness," p. 58.

95 Robert Wilkinson, *Nishida and Western philosophy*, Farnham, Ashgate, 2009, p. 118.

96 Nishida Kitarō, *Intelligibility and the philosophy of nothingness. Three philosophical essays*, trans. R. Schinzinger. Westport Conn, Greenwood Press, 1958, p. 197. "The contradictory nature of the self's mode of being is manifest also in our awareness of our own mortality, our own 'eternal nothingness: that every living being must die, and that our self faces permanent negation in death," Wilkinson comments, *Nishida and. . .*, p. 118.

97 M. Yama, "Ego consciousness," p. 53.

actor, or inventor of what is happening to her. She is also not influenced by others who dominate over her "I," because in her native culture, such an "I" simply does not exist. In conversation with others, such a person does not attribute specific features, intentions, or labels to her listeners, because this would be a sign of her domination over them. Instead, she tries to guess and infer the qualities of others from a broader context and relationship.[98]

The Japanese therapist acts in a similar way. Instead of asking *what am I?,* she prefers to ask what emptiness is and whether a given person experiences it properly, meaning that she releases herself from the limits of her psychosomatic condition to open herself to the whole and draw energy that is essential for her own life activity,[99] as Yama emphasizes. Nonetheless,

> what at first glance appears to be 'Nothingness' is not literally nothingness but may well contain everything that might gradually unfold into the future. But it cannot be understood by ordinary rational thinking and therefore cannot be expressed with words at first. Put another way, I could say that in the 'Nothingness' there are buds of all the possibilities which do not have any words; these possibilities are not yet even images that could be apprehended in a dream.[100]

Seemingly the "nothingness" is filled with energetic potentialities which cannot be considered in terms of Freud's unconscious nor in terms of Dostoyevsky, Bakhtin,[101] or Miłosz,[102] for the polyphonic, polymorphous, multiple, meandrous, serial-pluralistic etc. selves explored by these authors rather develop in line with the fluxus of chaotic technological stimuli surrounding and penetrating a Western individual. In the Polish psychotherapeutic tradition, two names may, to some extent, correspond with the Japanese psychoenergetic tradition, e.g., Antoni Kępiński and Kazimierz Dąbrowski. It is, however, not silence and nothingness, but the immanent mental potentials of a disintegrated self that is able to re-integrate, and, therefore, to re-empower herself and to rise above crisis.

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98   M. Yama, "Ego consciousness," p. 53.

99   M. Yama, "Ego consciousness," p. 53.

100 M. Yama, "Ego consciousness," p. 57.

101 Obviously, Bakhtin's "dialogic imagination," "internal dialogism" and dialogised self may inspire the theorists of narrative self today, see Michael Holquist, *The dialogic imagination by M. Bakhtin*, Austin, University of Texas Press, 1981, p. 173.

102 According to Aleksander Fiut, Miłosz was "against polyphony and for a variety of voices," Chapter "The identity game," idem, *The eternal moment. The Poetry of Czesław Miłosz*. Trans. T. S. Robertson, Berkeley, Los Angeles, Oxford, University of California Press, 1990, p. 208, note 10. The "variety of voices" permanently rattling and reverberating through our daily 'self' can be illustrated with some lines from Miłosz:

A positive disintegration process requires dialogical space in which "internal dialogism" can be facilitated by the external one. However, the dialogized self, the narrative self, the post-narrative self,[103] and the "Japanese" open self are distinct concepts regardless of their weakening nucleus. Premodern Western concepts of the self were focused on such a "nucleus," whereas the contemporary concepts were less and less "nuclear," as Denis de Rougeamont demonstrates:

> ... distinguish the person from all it is not individual, persona, 'strong individuality', sensitive soul, intellect, even elementary and often deceptive self-consciousness – the fact remains that belief in a distinct self and recourse to an absolute value of the person are virtually universal in the West (...) Far from dissociating the self, the psychological researchers of the 20th century name and reveal those forces tending to dissociate it, the neuroses assailing it on all sides, and recover, by the detour of their 'objective' descriptions, the Pauline opposition of the two men in me: the tyrannizing natural man (tyrannized in turn by the law) and the liberating spiritual man (...) there are so many realities approved in the West and ignored in the East,[104]

and vice versa.

3.4 Literary Narratives on Becoming Posthuman

Contemporary literature loves voicing experimental narratives of transhuman and posthuman protagonists, while records on the authentic first-person self narratives are difficult to access and scattered throughout medical papers. Philosophers also conduct thought experiments to analyze what it might be like to be(come) an animal, to share one's own brain with another human being that is a donor's extension, or to replace one's own natural brain with an artificial one to achieve a transtemporal identity.[105] Thomas Nagel[106] and Martina

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"I am walking about. No longer human.
Visiting our thick forests and houses and manors.
(. . .) I am abstracted
with disturbing questions from the end of my century,
mainly regarding the truth, where does it come from . . .?"
(Czesław Miłosz, "The Hooks of a Corset")

103 See Galen Strawson, "Episodic ethics," in: Daniel D. Hutto (Ed.), *Narrative and understanding persons*, Cambridge, Cambridge University Press, 2007.

104 D. de Rougemont, *The myths of love*, p. 194.

105 Martina Nida-Rümelin, *Der Blick von Innen. Zur transtemporalen Identität bewusstseinsfähiger Wesen*, Frankfurt am Main, Suhrkamp, 2006, pp. 48–53.

106 Thomas Nagel, "What is it to be a bat," in: David J. Chalmers et al. (Eds.), *Philosophy of mind classical and contemporary readings*, New York, Oxford University Press, 2002.

Nida-Rümelin developed related case studies to show human cognitive skills are limited, especially when confronted with inter-species reincarnation. Thus, becoming radically transhuman or posthuman would be a kind of anthropomorphic and anthropocentric illusion. In philosophy, using thought experiments remote from reality is a legitimate research method, as Nida-Rümelin admits.

Two case studies developed in the thought experiment convention will be presented below. Both related narratives were selected from modern and postmodern literature, namely Franz Kafka's *Metamorphosis* (1915) and T. Richard Brown's *The Face in the Mirror* (2012). They report on the radically posthuman experiences faced by the two main characters. Both novels are originally structured as first-person narratives with elements of internal and external dialogism. In both novels, the sequence of narratives and the actual course of events are correlated. It allows a researcher to follow the changes in both biographies and to detect, on the basis of the narratives, when the human and personal self abruptly confronted with non-human experiences face discontinuity and disintegration, and whether their subsequent persistence leads to growth (i.e., becoming posthuman) or, on the contrary, to regression and degradation. Both cases will be complemented by Mikhail Bulgakov's novel *The Heart of the Dog* (1925), which is briefly recapitulated, for the novel includes first-person and clinical narratives about a fictional experiment which involves turning an animal into a post-animal. Of course, applying narrative methods unavoidably implies expression and understanding trans- or nonhuman experience through the anthropomorphic and anthropocentric filter. The fiasco of the narrative method could not be more spectacular than at the initial moment of its application, which can only be hypothetical or literary (as literature can transgress the bounds science must respect).

3.4.1 *Franz Kafka's* Metamorphosis

Franz Kafka[107] depicted, in a vivid way, the experience of a sudden and brutal reincarnation (*Körperwechsel, Metamorphose*)[108] of a man's soul into a body of a

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107 See Sander L. Gilman, "Die Ängste des jüdischen Körpers. Aus Anlass der unwiderstehlichsten Kafka-Biografie, die es bis heute gibt: Reiner Stack lehrt uns, ein Genie neu zu lesen," *Literaturen* 2003, vols. 1/2, II, pp. 12–18; also Karel Kosik, "Das Jahrhundert der Grete Samsa. Von der Möglichkeit oder Unmöglichkeit des Tragischen in unserer Zeit," in: Kurt Krolop, Hans D. Zimmermann (Eds.), *Kafka und Prag*. Berlin – New York, Walter de Gruyter, 1994, pp. 187–198; Karl-Heinz Fingerhut, "Die Verwandlung," in: Michael Müller (Ed.), *Franz Kafka. Romane und Erzählungen. Interpretationen*, Stuttgart, Philipp Reclam, 1994.

108 See M. Nida-Rümelin, *Der Blick von Innen*, pp. 31, 313.

monstrous insect. In Kafka's biographical context, his *Metamorphosis* portends the approaching exclusion of a fraction of people from the human world, their dehumanization and, finally, the Holocaust. *Metamorphosis* emits a profoundly tragic message which can also be interpreted as a posthumanist *à rebours*. Gregor Samsa's experience does not spread any breakthrough-related optimism which permeates present-day posthumanist visions. Samsa's features, his behavior, his human and interhuman way of life get completely annihilated through different, repulsive traits and behaviors of a primitive animal organism. Although able to cognitively and emotionally track his day-by-day experience, which characterizes Kafka's literary style when he starts narratively reporting on Samsa's metamorphosis from a first-person perspective, it is an animal identity which predominates and absorbs his original identities as a young man with his human embodiment. To emphasize the key stages of Samsa's gradual transition from a human to animal condition, related excerpts are accompanied by my meta-comments such as ««human experience; ««animal experience (««non-human experience, respectively); ««transitory experience; ««being out of the place in the human world; ««posthuman experience[109] to stress. However, taking Nagel's conclusion seriously (that there is no possibility to cross the gap between human and animal first-person perspectives), transitory and animal experience remained out of Samsa's cognitive and emotional scope. Let us track Samsa's metamorphosis' trajectory step by step, following the milestones of Kafka's narration.

- "This morning Gregor was unable to get out of bed unaided. Lying on his back, he lifted his head with effort and saw some strange belly divided in brown segments (««*non-human, animal experience*). Several struggling legs (...) waved helplessly (...) against each other (...) before his eyes..." (««*animal experience*).
- "What has happened to me? he thought." "Well, supposing he were to say he was sick?" (««*human experience*). "He felt a slight itching up on his belly (...) He was even unusually hungry" (««*animal experience*).
- "... there came a cautious tap at the door behind the head of his bed. 'Gregor,' said a voice – it was his mother's – 'it's a quarter to seven. Hadn't you a train to catch?' That gentle voice" (««*human experience*).
- But "Gregor had a shock as he heard his own voice answering hers, unmistakably his own voice (...) but with a persistent horrible twittering squeak behind it like an undertone, that left the words in their clear shape only for the first

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109 Unlike *Metamorphosis,* T. R. Brown's novel includes explicit references to such experiences (see below).

moment and then rose up reverberating round them to destroy their sense" («*transitory experience*»).

- "His immediate intention was to get up quietly without being disturbed, to put on his clothes and above all eat his breakfast, and only then to consider what else was to be done, since in bed, he was well aware, his meditations would come to no sensible conclusion" («*human experience*»).
- "And he set himself to rocking his whole body at once in a regular rhythm, with the idea of swinging it out of the bed" («*human experience*»).
- "Gregor was now much calmer. The words he uttered were no longer understandable, apparently, although they seemed clear enough to him, even clearer than before" («*transition experience*»).
- He "... laid his head on the handle to open the door wide... but immediately, as he was feeling for a support, he fell down with a little cry upon all his numerous legs" (...) "his legs had firm ground under them; they were completely obedient, as he noted with joy" («*transition experience*»).
- "But when at last his head was fortunately right in front of the doorway, it appeared that his body was too broad simply to get through the opening." "Slowly, awkwardly trying out his feelers, which he now first learned to appreciate, he pushed his way to the door to see what had been happening there" («*transition experience*»).
- "For there stood a basin filled with fresh milk (...) he did not like the milk either, although milk had been his favorite drink" («*transition experience*»).
- "... his only regret was that his body was too broad to get the whole of it under the sofa. He stayed there all night spending the time partly in a light slumber" («*animal experience*»).
- "... a piece of cheese that Gregor would have called uneatable two days ago... Gregor's legs all whizzed towards the food (...) and [he] sucked greedily at the cheese" («*human and animal experiences confronted*»).
- "One after another and with tears of satisfaction in his eyes he quickly devoured the cheese, the vegetables and the sauce; the fresh food, on the other hand, had no charms for him, he could not even stand the smell of it" («*animal experience predominates*»).
- "... crawled up over the windowsill (...) in some recollection of the sense of freedom that looking out of a window always used to give him. For in reality day by day things that were even a little way off were growing dimmer to his sight" (t) («*melancholic human mood accompanies becoming non-human*»).
- "... about a month after Gregor's metamorphosis (...) he had formed the habit of crawling crisscross over the walls and ceiling. He especially enjoyed

hanging suspended from the ceiling; it was much better than lying on the floor; one could breathe more freely; one's body swung and rocked lightly..." («*non-human experience*).

- "'Come in, he's out of sight,' said his sister (...) They were clearing his room out; taking away everything he loved" (estranged and banned from the familiar world) (*non-human experience as a radically estranged*).
- "(...) he would certainly be able to crawl unhampered in all directions but at the price of shedding simultaneously all recollection of his human background?..." («*non-human, traumatic experience*).
- "(...) he [Gregor's father] lifted his feet uncommonly high, and Gregor was dumbfounded at the enormous size of his shoe soles (...) An apple thrown without much force grazed Gregor's back and glanced off harmlessly (...) The serious injury done to Gregor" («*human experience, conscious suffering and persecution*).
- "'We must try to get rid of it,' (...) 'He must go,' cried Gregor's sister, 'that's the only solution, Father' ... True, his whole body was aching, but it seemed that the pain was gradually growing less and would finally pass away." "'And what now?' said Gregor to himself, looking round in the darkness'" («*experience of being out of place in the human world*).
- "Then his head sank to the floor of its own accord and from his nostrils came the last faint flicker of his breath" («*non-human existential experience, agony*).
- "(...) the charwoman arrived early in the morning (...) She thought he was lying motionless on purpose (...) her eyes widened (...) 'Just look **at this, it's dead**; it's lying here dead and done for!' (...) 'Dead?' said Mr. Samsa (...) Indeed, Gregor's body was completely flat and dry (...) 'I should say so,' said the charwoman, proving her words by pushing Gregor's corpse a long way to one side with her broomstick" («*human consciousness of being perceived and treated as a thing; Freudian impersonal "Es;" reification; annihilation to the brute matter*).

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The narrative in *Metamorphosis* is mostly composed of sentences from a first-person perspective, quoted from Kafka's *Metamorphosis* and completed by a minimum of additional closely related phrases, with almost no meta-comments. The story reports on several core stages of physical, functional, and mental transition of a young adult male Gregor Samsa from his recent human to his present transhuman condition. One morning he awakes in the form of a huge beetle as a reincarnation of the complete human individual. The order of the narrative

corresponds to the gradual experiential evidence increasing Gregor Samsa's certainty about his abrupt, mysterious transfiguration.[110]

The protagonist wakes up from his dream, in the same way as a patient wakes up from a coma after undergoing an operation: *it is finally over, it is a fait accompli.* However, this awakening is just the beginning – the beginning of the end, to be exact. The end to which leads the martyr nature of the human ego and identity[111] confronted with his animal embodiment. That embodiment lacks its natural interactive attitudes. There is a human self locked inside of that, and there the world of the reality of life outside, and all interconnections between the two sides go ignored.

Despite the broad polysemy[112] as an integral element of horror of this superficial, physiognomic, but with time also organic, functional, experiential, mental and behavioral degradation of a human imprisoned in a caricaturally huge insect body, it is possible to consider, as part of a mind experiment, Gregor Samsa's case as an allegory of a radical posthuman experience. However, in this forced experience, nothing leads to the development of his identity and no factors which extended – and literally materialized – Samsa's self-identity in the 'ecological' manner, as the experiential deep ecology theory suggests (post-egoic interrelations with the universe of life, belongingness to the natural *oikos*, a biotic symbiosis or communion with fellow organic lifeforms, sympathizing with them, etc.). None of these postanthropocentric[113] ideals apply to the Samsa's experience.

In contrast, Samsa's metamorphosis implies a brutal degradation and collapse of his identity. A gradual decline of an "ego" trapped in a body, which in no way resembles Samsa's original body nor human body. Samsa's entire identity is inserted into another, primitive living organism, imprisoned and suppressed.

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110 In Kafka's original literary concept Gregor Samsa's transfiguration allegorically depicts his brutal and absurd alienation from the social context as a Jew, see V. Krischel, *Kafka.*

111 Eugen Bleuler, "Die Ambivalenz," in: Manfred Bleuler (Ed.), *Beiträge zur Schizophrenielehre der Zürcher Psychiatrischen Universitätsklinik Burghölzli (1902–1971)*, Darmstadt, Wissenschaftliche Buchgesellschaft Darmstadt, 1979, p. 87.

112 It is rooted in the biographical context examined, *inter alia*, by Sander L. Gilman, "Die Ängste des jüdischen Körpers." *Literaturen* 2003, vol. 1/2, II, pp. 12–18; K. Kosik, "Das Jahrhundert der Grete Samsa," pp. 187–198.

113 They rather tend to the Buddhist inspirations voiced by M. Yama. See, e.g., John Seed, "The ecological self," *Earth Light Magazine* 2005, vol. 14, no. 4; and Matthews Freya, *The ecological self*, New York, Routledge, 1991; Arne Naess, "The shallow and the deep long-range ecology movement: A summary," *Inquiry* 1973, vol. 16, pp. 95–100.

The new body prevents his previous identity from any kind of manifestation and ability to function in the human world. Living and functioning in a primitive organized bodily microcosmos was a very devastating experience for human beings, Kafka's message suggests.

At the same time, up until the very end, Samsa deals with the dual-perspective (or at least transitional between his original, i.e., human first-person experiential perspective, and the experiential first-perspective imposition forced on him by his animal embodiment) of his transfiguration: first-person view from within, as a result of a proprioception (as if his former human neural system cooperates with his new animalistic body) and the "clinical"[114] view from outside. Later on, Sartre described a very similar experience when thinking about the alienating stare of others when they watch us in the same manner as a naturalist's eyes a netted insect. Samsa has absolutely no control over his transformation; he is just a passive observer. Instead of being preoccupied with his current life, Samsa mourns over the life he has lost.

The reader of *Metamorphosis* is dealing with an account of three processes, progressing and interwoven with each other, which progress over the span of just a few months. The first process is a forced dissociation of an ego and its old and new embodiment. The second process is the progressing disintegration of Samsa's personality. The third process is the desynchronization of Samsa's life, cognitive and social functionalities. The horizon of his life has been narrowed to four walls of his room, soon stripped bare of all objects by his family, and turned into a prison cell. He no longer has access to human reality. He is unable, by any means, to settle in the insect reality. However, there is also no place for him in some sort of third, transhumanistic reality between that which is human and that which is insectile. Each paragraph of *Metamorphosis* renews the drama: initially rebelling against his imprisoning, he finally gets even more excluded from his familiar, human habitat.[115] At the same time, his strange embodiment does not offer him any safe shelter, any familiar housing as it is, or as it should be, with a living organism's exterior.

The state in which Gregor Samsa finds himself seemingly bears the stamp of schizophrenia, of which the basic symptom is a duality, the loss of selfhood on behalf of doubling and the presence of two subjects in one body (*dividuum*),[116]

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114 On reincarnation (*Körperwechsel*) and identity see M. Nida-Rümelin, *Der Blick von Innen,* p. 313.

115 See Karl-Heinz Fingerhut, "Die Verwandlung," in: Michael Müller (Ed.), *Franz Kafka. Romane und Erzählungen. Interpretationen*, Stuttgart, Philipp Reclam, 1994, p. 57.

116 Towards the false self and schizoid condition, for example the embodied and unembodied self, see Ronald D. Laing, *The divided self. An existential study in sanity and madness.* Baltimore, Penguin Books, 1965, p. 65; also M. Ratcliffe, *The feelings of being*.

foreign and hostile towards each other. The clarity of mind and self-awareness which Samsa retains till the very end are sometimes also observed in "eloquent, educated" schizoid patients. They "are aware of what they have lost. For those patients, the new reality is strikingly different from their former one. The order of things is completely disturbed. People are no longer the same as they were before. Things and other human beings become increasingly peculiar and foreign, and ultimately lose all their connection with the patient."[117] And on the other hand, there is no connection on the patient's side as well,[118] as he is going to quickly and completely forget his past, like Gregor Samsa (but "what about sleeping a little longer and forgetting all this nonsense," he rhetorically asks).

At all costs, he is trying to rip off this preposterous guise,[119] which isolates him from others and additionally makes them repulsed by him in the same way as vermin can. But those closest to him do not want to see a human underneath this hard shell of an insect. Would that be Gregor? Impossible: ". . .Gregor was a member of the family, despite his present unfortunate and repulsive shape, and ought not to be treated as an enemy, that, on the contrary, family duty required the suppression of disgust and the exercise of patience, nothing but patience."[120]

A man turns out to be internally and subjectively attached to his human body, which he sees as his own. This individualistic form is not only his facade and exterior layer, but also it is the embodiment of his essence; he *is* his body. That attachment is absolute. However, the radical post humanistic view questions its strength in the name of the decentralisation of the anthropocentric and ego-centered identity. The infinite bond exists not because of the evolution which shaped human identity as a species but also as an individual. Evolution – as proved by Hans Jonas[121] – created a generic identity. Meanwhile, Friedrich Dürrenmatt believed that we, people, inherited "a prelogical and premoral brain"[122] from nonhuman

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117 M. Bleuler, "Die schizophrenen Krankheitsbilder," in: M. Bleuler, *Beiträge zur Schizophrenielehre*, pp. 147–162.

118 Indifference towards reality and alienation are the basic symptoms of the desynchronization in schizophrenia.

119 False, misguiding, masking the external, in Arab *mashera,* in Italian: *maschera*, in Polish: *maska* but also *maszkara/monster*, compare Klaus E. Müller, *Der Krüppel. Ethnologia passionis humanae*, Munich, C.H. Beck, 1996, p. 234.

120 F. Kafka, *Metamorphosis*, p. 64.

121 In this volume.

122 Undermining anthropocentrism, humanist idealism, myth or progress, myth of science, and the faith in a linear natural history, see Marco Schüller, "Das archaische Gehirn. Über ein Phantasma in Hirnforschung und Literatur," in: Karin Herrmann,

creatures. Gregor Samsa clashes with this primal brain, mind, and identity trapped in the body of an insect, which has robbed him of all traces of human mentality. It is a drastically self-alienating experience, not a return to the dark, unconscious sources of the conscious. The reshaping of a human brain and mind into an animal one is impossible, even if humanity inherited the archaic core of the mind from its evolutionary ancestors. Dürrenmatt's stance gives us something to contemplate:

> I am convinced that the brain has not changed much (*das Gehirn gleichgeblieben ist*). (. . .) However, suddenly it has become our enemy. It has played the human off against himself, pushing him towards a biological crisis (*eine biologische Krise*). I think that humankind is biologically endangered (*die Menschheit als biologisch in Gefahr*). I am not sure what it will lead to (...), now that we know that the human brain is greater than the human himself (*der Mensch hält eigentlich sein eigenes Gehirn nicht aus*).[123]

In his novel, *The Heart of the Dog* (1925), Mikhail Bulgakov addresses a reverse narrative towards a fictional experiment with xenotransplantation, aiming to let a dog develop unexpected, post-animal functionalities, although the original aim of that experiment was completely different:

> *23 December.* At 8.30 in the evening a pioneering operation performed (. . .) the first of its kind in Europe: under chloroform Sharik's scrotum was removed and replaced by human testes with seminal vesicles and vasa, taken from a man aged 28 (. . .) the hypophysis was removed after trepanation of the top of the skull and replaced by the human equivalent from the same man (...). The aim of the operation: (. . .) to explore the acceptability of hypophysis transplant and its potential for the rejuvenation of the human organism,

that is, to improve the New Soviet Man, e.g., to create new traits, including ideologies and propaganda slogans inherited as an evolutionary-progressive improvement.

Behind the satiric convention, the dog's inside perspective combined with clinical observation is provided as the main narrative view. As a result, Bulgakov developed an anti-utopia about turning animals into highly developed psychic individuals (or enhancing any organism and subject in that way).[124]

Neuroästhetik. Perspektiven auf ein interdisziplinäres Forschungsgebiet, Kassel, Kassel University Press, 2010, p. 108.

123 Friedrich Dürrenmatt, *Dramaturgie des Denkens. Gespräche 1988–1990*, H. L. Arnold, A. von Planta, J. Strümpel (Eds.), Zürich, Diogenes, 1996, p. 115; also Hoimar von Ditfurth, *Der Geist fiel nicht vom Himmel. Die Evolution unseres Bewusstseins*, Wien, Verlag H. Bauer – Medien, 2003.

124 Mikhail Bulgakov, *The Heart of the Dog*, transl. A. Pyman, Moscow, Raduga Publishers, 1990 (e-version).

The consequences of creating a post-animal dog were "incalculable." Instant advances in the acquisition of language were observed:

> He can say a great many words: 'Cabby'; 'There's no seats'; 'Evening paper' (...) There is something almost phonographic about it; as though the creature had heard swearwords somewhere earlier on and had automatically, subconsciously recorded them in his mind and was now belching them up in wads. (...) It is as though, having been deep frozen in his consciousness, they are now thawing out and emerging. Once out, the new word remains in use.[125]

Bulgakov's novel may be a timeless warning about enhancement and eugenics applied to both humans and animals in order to grant them a privileged status. The writer used to work as a military physician and changed his profession after the Soviet Union forced medical professionals to conduct eugenic experiments.

3.4.2 T. R. Brown's The Face in the Mirror

T. R. Brown's book, *The Face in the Mirror. A Transhuman Identity Crisis* (2012), is admittedly not a literary artwork, but a postmodern exemplification of radical posthumanist S-F. Brown's thought experiment about the self-identity crisis of the main character, Todd Herschel. He deals with multiple transformations. After he lost his body (his 'entire body was amputated') as a result of a nearly fatal car accident, his brain was removed from his corpse and implanted into a new, "neohuman" body, with no more than forty percent of human DNA. In this new embodiment, everything was new: it showed not only human, but also animal properties; it was not masculine, but feminine. Additionally, his brain's replica had been reproduced in the software.

Todd Herschel wakes up from narcosis, completely oblivious. This moment of awaking shows analogies with Kafka's *Metamorphosis*. Todd discovers his new situation step by step, the first time by looking at himself in a mirror:

> A felis female was standing less than two feet in front of me, green cat slit eyes, mottled black and grey fur and a face that had thin almost human lips, flat cat nose and high forehead, topped by a pair of pointed ears behind which her head was bandaged. (. . .) As I saw my own hand rise in front of me mirroring the stranger, I realized it was my own reflection in the mirror (. . .) What happened to me? I asked.[126]

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125 M. Bulgakov, *The Heart of the Dog*.
126 T. Richard Brown, *The face in the mirror. A Transhuman identity crisis*, Own Edition, 2012, p. 17.

Despite the low probability of the entire case developed by T.R. Brown in reality, for many experiences described by Todd, analogies with reports delivered by transplant patients and patients with amputees can easily be found. In particular, patients with face allografts must learn to recognize their new physiognomy, drastically changed after facial surgery, and to become familiar with it. A self-reidentification process may take a long period of time.[127] Undergoing face transplantation provides them with a human face that not always resembles their original one. They have, though, received a *human* face. This was not Todd's experience. After a long period his acceptance of his new embodiment did not extend to his semi-feline, semi-human face.[128] Although

> I no longer saw a monster in the mirror, I didn't see me either. I didn't even see the new me. I saw a stranger, and she gave me the willies. Even though, intellectually, I knew it was me behind those eyes (...) When I looked at the other features of my new face, it's hard to describe what I felt. Fear was part of it, anger, alienation. I have heard of a rare condition where people can't recognize their own reflections. It was line and unlike that. I saw a stranger, but (. . .) I knew I was looking out through those inhuman eyes.[129]

Todd's existence as "the old human self"[130] hidden in a feline camouflage was mostly dedicated to dealing with what and who he was now, and to learning to accept the truth about himself. Becoming a transsexual[131] allowed him to undergo spectacular intimate and social experiences, including pregnancy and performing a bisexual, polyamorous marriage. Unlike in Gregor Samsa's case, the initial crisis of Todd's whole embodied self-identity was followed by a gradual recovery, development, and growth. His second identity will show mixed, "hybrid" and "post-personal" (as the posthumanists put it) properties and capacities. His cognitive and linguistic capacities seem to remain intact, regardless of his new embodiment (which apparently belongs to delusions of posthumanism).

The development of Todd's afterlife identity was increasingly controlled by his physiology and other functionalities of his new, half 'feline' embodiment, and which was medically supported. Their influence prevailed over his original brain, except its originally human cognitive functioning. This development supports a popular conviction a human being/a person's identity is concentrated

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127 See Carla Bluhm, Nathan Clendenin, *Someone's else face in the mirror*, Westport, London, Praeger, 2009, pp. 93–94; Jennifer Swindell Blumenthal-Barby, "Facial allograft transplantation, personal identity, and subjectivity," *Journal of Medical Ethics* 2007, vol. 33.

128 T. R. Brown, *The face in the mirror*, p. 334.

129 T. R. Brown, *The face in the mirror*, pp. 232, 59.

130 T. R. Brown, *The face in the mirror*, p. 377.

131 T. R. Brown, *The face in the mirror*, p. 19.

in their brain,[132] and the brain plays the role of *Hegemonikon,* not only in a living organism but also in shaping and reshaping one's self-identity.

Brown's novel is pretentious, full of very improbable periptery, monotonous and literarily dull. But it cannot in any way be denied one advantage: the first-person perspective based narrative and dialogical convention (though absolutely incomparable with Plato's dialogical mastery), combined with a clinical observation from the perspective of medical practitioners caring for Todd, allowed for the consideration of a few accurate points around the shaping an individual identity based on embodied cognition.

Namely, the creation of identity is influenced not only by the snippets of information gathered and stored in the brain, but also peripheral neural clusters which can regulate parts of the metabolism[133] even when disconnected from the central nervous system, and other subsystems:

- "You will likely find you have reflexes to do things you never did before and things you used to be able to do will be difficult;"[134]
- "Your new body has muscle memory that will sometimes respond in ways you don't expect. It will take time, but you will learn to either control it, or get used to it, or even benefit from it,"[135]

as Todd's medical assistants make him aware of. Embodiment is not a passive instrument, nor is it a container and hardware to realize our cognition[136] and cognitive functions monopolized by the brain[137,] whose replica was supposed to simulate neural functions at the "molecular"[138] level of artificial intelligence in Brown's novel (Todd's brain was re-written to provide the foundations of Todd's rebirth as a cyborg).

Corporeality, as Brown suggests, is far more complex, independent, and marked by personal experience than is believed by those advocating for locating human's identity solely in the brain and enthusiasts of the "recycled body," as well as those who celebrate incorporeality, which nowadays posthumanism praises as an

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132 T. R. Brown, *The face in the mirror*, p. 39.

133 T. R. Brown, *The face in the mirror*, p. 113.

134 T. R. Brown, *The face in the mirror*, p. 24.

135 T. R. Brown, *The face in the mirror*, p. 24.

136 Christian Gärtner, "Cognition, knowing and learning in the flesh: Six views on embodied knowing in organization studies," *Scandinavian Journal of Management* 2013, vol. 29, p. 340.

137 T.R. Brown, *The face in the mirror*, pp. 113–114.

138 T. R. Brown, *The face in the mirror*, p. 113.

expression of liberation of man from the embodied and organic and thus a vulnerable, mortal and not always comfortable existence. From a scientific point of view, the doubt expressed by the therapists taking care of Todd that relocating a brain into a new body could imply *insanity*,[139] but also the collapse of one's mind and his entire previous self-identity is absolutely valid.

Therefore, Todd's personal therapist notes: "I don't think you can avoid having some similarities to our other transplant patients (. . .) As for losing yourself, with as extensive a transformation as you've gone through, your sense of self is going through serious revision. Have you ever heard of transhumanism?"[140] Todd reports on his new embodied identity as if it was "sharing halves of the same soul"[141] with someone else whose body he feels implanted into. It is about his brain-related identity and body-related identity and the discontinuity between the two. It is about bridging "the gap" (van den Berg's terms) and re-joining the two heterogeneous systems together. Todd apparently observes himself becoming capable of "having one's actions imputed to oneself."[142]

"You show them you are a person"[143] and not a hybrid transhuman creature, becomes a kind of Todd's humanist imperative. The need for social recognition and evidence of having evolved into a coherent identity, including the moral self, would be, however, signs of predomination of his original human identity over the animal, said not to have any morals. Watching his own avatar on a computer screen,[144] Todd certainly realized that the life of the mind and all that what a

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139 T. R. Brown, *The face in the mirror*, p. 114.

140 T. R. Brown, *The face in the mirror*, p. 87.

141 T. R. Brown, *The face in the mirror*, p. 326.

142 Reinhard Merkel et al., *Intervening in the brain. Changing psyche and society*, Berlin, Heidelberg, Springer Publishers, 2007, p. 219. Brown's novel, however, miraculously spares Todd to be confronted with side symptoms resembling on those of lobotomy: "in the early 1950s lobotomies were still performed at a rate of 5.000 per year in the United States notwithstanding their side effects, which include inertia, apathy, decreased attention, social inappropriateness, and seizures (...). How drastic a change in personality can result from brain surgery has been famously depicted by Jack Nicholson in Milos Forman's movie *One Flew Over the Cuckoo's Nest* (1975). Nicholson played McMurphy, a rebellious patient in a psychiatric ward, who in the end is subdued by lobotomy, thereby turned into an apathetic wreck. With Nicholson's performance in mind one might wonder if a person's identity can get 'extinguished' without it being replaced by a new one, but also without the person ceasing to exist altogether," p. 191.

143 T. R. Brown, *The face in the mirror*, p. 370.

144 T. R. Brown, *The face in the mirror*, p. 424.

person thinks of as his self-identity, also includes his own "somatic reflection," both conscious and unconscious (tacit). We think and feel through our bodies, in particular through the parts making up brain and neural system, stresses Shusterman.[145]

145 Richard Shusterman, *Body consciousness: A philosophy of mindfulness and somaesthetics*, Cambridge, Cambridge University Press, 2008, p. 113; see also Richard Shusterman, *Thinking through the body. Essays in somaesthetics*, Cambridge, Cambridge University Press, 2012. And vice versa, our bodies are dependent on our mental life, e.g., some thought, memory – even if not fully conscious yet – or the words spoken by other people result in a blush, pounding of a heart, catching of a breath.

II. The Evolution of Body Concept

Although modern man's attention is often considered to be reoriented from spiritual and intellectual aspects towards the *bodily* aspects of the human (and trans- or posthuman) condition, the body reveals impressive complexity. It had been explored from early antiquity until today; in biology, the medical sciences, philosophy, art, and religion. Autocreative and technopoietic activities addressed human embodiment in its all micro and macro dimensions. Revisiting body concepts from the basic to the most complex allows one to make the body's trans- and posthumanist 'evolution' more comprehensive. However, although the concepts listed above suggest the state-of-the-art in the living and lived body-related expertise has already broken the body's opaqueness and became "transparent" to technological and medical imagery tools,[146] a lot of open-ended questions are still emerging, such as the following one: Do our bodies really evolve according to the invented schemes of the posthumanist scholars? Is it just body concepts and theorizations that evolve across disciplines and explorative or experimental human practices? What position does an embodied self have today "between animal and angel, past and future, condemnation and redeeming?"[147] (*zwischen Tier und Engel, zwischen Vergangenheit und Zukunft, zwischen Verdammnis und Erlösung*)? Let us revisit and revise the body concepts necessary to provide at least a provisional answer.

1. Objective Material Reality, Brute Body, Fleshness, Corporeity

The term 'brute body' means objective materiality or simple corporeity. Nowadays, the sense of this originally Aristotelian category reflects itself in a fleshy "container for the mind"[148] or physical "hardware in which cognition is realized."[149] To Aristotle, brute body was not even a container, but "merely

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146 Marc Chrysantou, "Transparency and selfhood: Utopia and the informed body," *Social Science & Medicine* 2002, vol. 54, pp. 469–479.

147 Hans Jonas, *Organismus und Freiheit*, KGA, Bd. I/1, H. Gronke (Ed.), Freiburg, Berlin, Wien, Rombach Verlag, 2010, p. 262.

148 Christian Gärtner, "Cognition, knowing and learning in the flesh: Six views on embodied knowing in organization studies," *Scandinavian Journal of Management* 2013, vol. 29, p. 340.

149 C. Gärtner, "Cognition, knowing and learning" p. 340.

substratum, indeterminate," a "material cause of something else."[150] Brute body is more than an aggregation of physical molecules, but less than a colony of cells, which, for example, make up a tissue. This term, used in technical and scientific contexts, is completely depersonalized, desubjected, deindividualized, amorphous, as it belongs to material objectivity along with dead matter, natural or artificially synthetized, mechanically – and liberally – used and reused, replaced, transformed, annihilated, etc., thus, instrumentalized. Applying such terminology to the human body implies radical reductionism and dehumanization, as illustrated by Gärtner's "container" with no individual, or even human, features. But thinking such brute materiality in the form of a container-like exteriority would also be thinkable for radical idealism and spiritualism, dualism, materialism, and naturalism. The brute matter seems like an all-purpose, universal category, for it is "indeterminate," plastic, easy to shape, manipulate, measure, quantificate, and distribute. "In fact 'matter' in the sense of 'body' becomes more rational an object than 'spirit.'"[151] Applied to the human body, the brute matter becomes material to shape and re-shape liberally, with rational and technological tools. It is just a Cartesian "*res extensa* or external reality,"[152] and Husserl's objective corporeity: *Leibkörper, Raumkörperlichkeit, Gegebenheit*, "physischer Dingleib," "reales, substantiell–kausales Ding."[153] According to Aristotle, a formal cause is shaping the brute physical matter in analogy with marble or bronze: "This is a clear case where form denotes the essential aspect while the matter is a necessary condition for representation but is more or less interchangeable. The same form could be embodied in a different lump of bronze, or even in a different material altogether."[154]

2. Living Matter and *Soma Organikon*

Every living being is built not just of solid, amorphous flesh matter (fleshness, according to Merleau-Ponty), but has natural, "organic equipment"[155] which is to

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150 Hans Jonas, *Leben und Organismus – Life and Organism,* KGA, III/3, J. P. Brune, J. O. Beckers (Eds.), Freiburg, Berlin, Wien, Rombach Verlag, 2016, p. 390.

151 Hans Jonas, *Organism and Freedom,* KGA, I/4, Chap. I, "Introductory. 'Life' and the Scientific Spirit," p. 18.

152 H. Jonas, *Organism and Freedom*, p. 22.

153 Edmund Husserl, Hua XIV, p. 57.

154 H. Jonas, *Leben und Organismus – Life and Organism*, p. 391.

155 H. Jonas, *Leben und Organismus – Life and Organism*, p. 374.

be understood as an organized aggregation[156] of cells living together as a colony, or making up specific tissues (cells of the same type and function connected together), organs, and, finally, an organism as a whole. There is life in cells in terms of ongoing biochemical and physiological processes defining living matter (*zoe*). A single somatic cell is a microcosm with its own 'self,' as Jacky Stacey shows. "The cells are personified," and a particular cell may change its identity and endanger the life of the whole body or an embodied individual.[157] "Both conventional and alternative accounts represent the cell as a metaphor of the self. In the scientific accounts cell are given individual identities: like us, they desire, they fear, they have intentions, they triumph, and they are satisfied."[158]

An organic body of a single living being is made up of organs, and organs are made up of living cells organized in tissues. Unlike the brute body, "an organic body is the necessary material for the presence of an active soul."[159] To Jonas, who was inspired by the concept of *soma organikon* from Aristotelian philosophy, even the most primitive organisms manifest some kind of an individual vegetative 'soul.' "Not just any amorphous matter is a potentially living body, but a very special organization of materials in very particular proportions, shapes and conditions, which represent the potential site of life, i.e., the *soma organikon* – something that is articulated in the mode of organs or which as a whole is an interrelated system of instrumentalities. Soul is that which assures the actualization of that potential."[160]

156　Living organisms possess somatic and non-somatic cells such as germline cells (gamets). Blood is as a complex tissue composed of cells (erythrocytes and several types of leukocytes) and other substances. The human organism begins as a single embryonic cell which undergoes differentiations to create a multicellular organism. Although an organism's global identities cannot be reduced to the embryonic DNA, DNA recombination of DNA and gene manipulation with the use of extra-species genetic matter to change selected features of a future organism (*Genchirurgie*) is leading humanity to "a terra incognita." This bio-artistry tries to override a living soma to reorganize "the molecular alphabet of life itself," Hans Jonas, "Technik, Ethik und biogenetische Kunst," in: *Organismus und Freiheit. . .*, p. 379. A living being vulnerability – which is also one Jonas' powerful concepts – is being cheated by science and technology.

157　Jackie Stacey, *Teratologies. A cultural study of cancer*, London, New York, Routledge, 1997, p. 148.

158　J. Stacey, *Teratologies*, p. 149.

159　H. Jonas, *Leben und Organismus – Life and Organism*, p. 390.

160　H. Jonas, *Leben und Organismus – Life and Organism*, p. 395.

Soma organikon was also explored by Herophilus of Alexandria, Soranus, Galen, etc. due to the hierarchy of organs, their functions, and their interrelations within the human organic body. While the Aristotelian tradition claiming the heart to be the seat of human soul was revised,[161] Herophilus "places the dominant principle of the 'soul' in the ventricles of the brain."[162] Galen and Herophilus described the nervous system as the origin of motion and as a kind of "power which Galen himself defines as a 'soul', i.e., vital force, for all the motion of muscles and nerves ceases when soul departs."[163] With ancient physicians the nervous system and the psyche met together and become to a unified, central organ within the human organism. Mapping the latter, they determined organs with life-supporting roles. The liver, pulmonary system, and "the heart as the centre of the blood system and the connection between the heart and the pulse-beats"[164] were considered as principal organs. Charged with six hundred vivisections and embryosections enumerated by Celsius and condemned by Tertulian, Herophilus contributed to the organic body definition as an integral, hierarchically organized, living totality.

The body's first organizational principle was considered to be incorporated in two central organs, namely the heart and brain, and called *hegemonicon:* "One says the heart, another the meninges, and one that the brain contains the hegemonikon of the soul."[165] "The hegemonikon was therefore regarded as not being dependent on a single or fixed location,"[166] but flexible. Interestingly, its proponents were divided in two parties: "those who maintained that the hegemonikon was found in the head (encephalocentrists) and those who argued that it was located in the heart or its immediate vasculature (cardiocentrists). Apart from Galen, on the encephalocentric side can be placed, among others, Ptolemy, Herophilus and Erasistratus, Plato (...) and certain of the Presocratics."[167]

Sappho was the pioneer of the *soma organikon*'s wholeness, complexity, and integrity. She found the archaic, preorganic concept of *sôma* as "body in pieces"[168]

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161 John Dobson, "Herophilus of Alexandria," *Proceedings of the Royal Society of Medicine* 1925, vol. 18, p. 19.

162 J. Dobson, "Herophilus of Alexandria," p. 20.

163 J. Dobson, "Herophilus of Alexandria," p. 20.

164 J. Dobson, "Herophilus of Alexandria," p. 21.

165 Julius Rocca, *Galen on the brain. Anatomical knowledge and physiological speculation in the second century AD*, Leiden, Boston, Brill, 2003, p. 17.

166 J. Rocca, *Galen on the brain. . .*, p. 17.

167 J. Rocca, *Galen on the brain. . .*, p. 17.

168 Page du Bois, *Sappho is burning*, Chicago, London, The University of Chicago Press, 1995, p. 75. Sappho is considered to say, "the *philosophos* is the man who loves

inappropriate. Sappho's body concept assumes interconnections between organs as parts of an organism and morphemes as parts of a body. She was one of the first to recognize the continuity between the external and internal, the somatic and mental (experiential, emotional and intellectual) aspects of organic life. Distinguishing these aspects, a beholder's perception must not destroy the wholeness as it would be typical to monism and dualism. In a living organic being, there is "a knot of being" (*der Knoten des Seins*), which subverts dualism (*zerhaut den Dualismus*). Materialism and idealism attempt to untie the knot by pulling it to their respective sides – however, "in vain." According to Jonas' holistic ontology of organism "part of an organic body exists only in the whole as a part of the whole (. . .) Only as parts of the functioning whole do they remain what they are."[169]

3. Organic Identity and Individuality

To Jonas, an organism as "the identity that constitutes itself" shows "the ceaseless creativity of self-continuation." It is "a constant challenge to mechanical nature,"[170] "open to interference, in its delicate balance of functions, which is effective only as a whole, [it is] vulnerable, and mortally so in its centre."[171] Thus "the existence of the organic individual is that of function and not of substance."[172] Jonas is convinced an individual organism maintains itself: and "in this polarity of self and world, of internal and external (. . .) the basic situation of freedom with all its daring and distress is potentially complete."[173]

The "initially problematical nature of life"[174] is that of every single living organism. Beyond its unique and finite existence, organic life is going to strive for immortality, however, not the immortality of ancient metaphysics. Metaphysical

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(*philei*) wisdom (*sophia*), he stands in contrast to the *philosomatos*, who loves the body. Women are the lovers and keepers of the body, associated with the flesh and its claims," p. 89.

169 H. Jonas, *Leben und Organismus – Life and Organism*, p. 372.

170 Hans Jonas, *Organism and Freedom. An Essay in Philosophical Biology*, KGA, I/4, J. O. Beckers, F. Preußger (Eds.), Chap. II, "The basic mode of organic existence: metabolism," p. 65.

171 H. Jonas, *Leben und Organismus. . .*, p. 372.

172 H. Jonas, *Organism and Freedom. . ., "*The basic mode," p. 48.

173 H. Jonas, *Organism and Freedom*, "The identity of the organism," p. 54.

174 H. Jonas, *Organism and Freedom,* "The basic mode of organic existence," p. 48.

immortality "is here replaced by the immortality of the germ-plasm as a continuous existence in itself."[175]

What makes the organism an individual? It is not only its unique phenotype, but its self-maintenance, internal homeostasis, intentionality, functionality, and ecological openness, i.e., an intelligent interplay with the environment, and "inwardness." The latter represents "the outward" constantly interacting with it or using its resources. According to Jonas, that activity is "one form of the self-transcendence of organic being. (. . .) The transcendence, the being a self by going beyond the self, is ever more elaborate and opens up new horizons as we proceed to the higher forms, and the horizons are always horizons of transcendence, not sticking to the mere empty self-identity of a material body (. . .) Organic individuality and organic identity are themselves teleological facts (. . .) Therefore, process character, transcendence, identity by means of change, goal-directedness in terms of teleological structure of being are all one and inseparable in the ontology of the living thing."[176] Jonas' philosophical biology radically raises the value or even the *dignity* of living organisms, which originates from their intrinsic teleology (whereas it is obvious to him that the molecular particles of brute matter do not show any). "For the complex *organic* parts (e.g., cells in a multi-cellular organism) (. . .) the fact is that not only their membership but their existence itself is organic, i.e. (. . .) a product of the teleology of the whole, which therefore cannot be derived from theirs."[177] Jonas' reassessment of a living organism's intrinsic value occurs on a definitory and descriptive level, beyond anthropomorphism and Cartesian reductionism. Underlying wholeness and individuality as core features of a living organism, Jonas provides a strong argument against the politicization and technicization of human and animal bodies: "for in real corporeal individuals the way in which the whole unites the parts and the parts form the whole is in all major respects diametrically opposed to what we found to be the case in a social whole."[178]

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175 H. Jonas, Chap. I, "Introductory. . .," p. 75.

176 H. Jonas, *Life and Organism*, pp. 458–459.

177 H. Jonas, *Organism and Freedom*, "The basic mode of organic existence," p. 32.

178 H. Jonas, *Organism and Freedom*, "The basic mode of organic existence," p. 32. See also Hans Jonas, "Philosophical reflections on experimenting with human subjects," *Daedalus* 1969, vol. 98, pp. 243–245, and "Gehirntod und menschliche Organbank. Zur pragmatischen Umdefinierung des Todes," in: Hans Jonas, *Organismus und Freiheit*; also Jean-Pierre Wils, "Person und Leib," in: Johannes Hoff, Jürgen in der Schmitten (Eds.), *Wann ist der Mensch tot? Organverpflanzung und Hirntodkriterium*, Hamburg, Rowohlt, 1994.

What are the implications of Jonas' plea for organically invented individuality, in particular for humans? As I explained elsewhere[179] why an "Organbank" (allograft commercialization) would reduce human tissues and organs to a lower category of ordinary things[180] (*Bereich bloßer Dinge*), here my only purpose is only to highlight that, according to the reasons articulated above, a person has an "unconditional right to one's own organs and one's own body" but "nobody has the right to another person's body."[181]

According to Jonas, organ donation and reception presupposes the active cooperation of the donor's functioning organism as a source of wholesome organs. However, such interindividual cooperation is not just about the exchangeability and replaceability of tissues, and organs, including prosthetics and other kinds of crosscorporeal bodies. Jonas' argument emerges not from the artificialism vs. naturalism controversy, but from individuality and identity as already prioritized by a living organism as a postdualist conceptualized *whole*: "The individuality of an organic being is self-centered (*selbstzentriert, egozentrisch*) and turned away from the rest of the world which is external to it (...). The whole integrates itself. (...) Sameness means self-determination (*Selbigkeit ist selbstbestimmend, Selbständigkeit*) (...). An individuality which lasts because of a creative process is a 'living organism' and not a 'part of the world.' "[182] However, being an individual organism does not imply isolation and full independence from "socio-material environments."[183] Intended or not, the neuroscientists repeatedly confirmed the key role of organic homeostasis[184] and sameness for the conscious and autobiographical self of human beings. "The basic form of consciousness, core consciousness is placed in the context of life regulation; it is seen as yet another level of biological processing aimed at ensuring the homeostatic balance of a living

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179 See Ewa Nowak, Roberto Franzini Tibaldeo, "Organismus und Freiheit/Organizm i wolność," "*Filozofia i Nauka* 2017, vol. 5, pp. 29–48.

180 Hans Jonas, "Gehirntod und menschliche Organbank," p. 525.

181 H. Jonas, "Gehirntod und menschliche Organbank," p. 516. Of course, transplantation technology does not imply an organ donor's death for he/she "does not die by saving the recipient's life," Margrit Shildrick, "Staying alive: Affect, identity, and anxiety in organ transplantation," *Body & Society. Special Issue: Estranged Bodies* 2015, vol. 21, no. 3, pp. 28–29.

182 H. Jonas, "Gehirntod und menschliche Organbank," p. 165.

183 See also Gärtner, "Cognition, knowing and learning in the flesh," p. 339.

184 See Tom Ziemke, "The embodied self: Theories, hunches and robot models," *Journal of Consciousness Studies* 2007, vol. 14, no. 7, pp. 167–179.

organism; and the representation of the current organism state within somato-sensing structures is seen as critical to its development."[185]

Serious, sometimes indefinable interdependencies (but not 'by-play' factors) must be involved when Jonas claims that cloning an individual organic body is impossible because its actual shape, condition, and character are determined not only by their genome which, unlike the organic body, can be cloned. "A body as a whole is so individualized and is so much myself that it remains unique and belonging to my identity in the same way in which the brain, fingerprints, or immunological reactions belong to it."[186] It is not restricted to a sum of particular organs, properties, functions, and skills. It is thoroughly holistic, and that is how it should be perceived and respected by others. "My identity is the identity of the whole organism (...) even when the higher functions which have a seat in the brain have stopped working. How else can one fall in love with a woman and not only her brain? To love the expression of someone's face? A delicate silhouette?"[187]

4. Own Body

It was Aquinas who pioneered the concept of one's own individual *body*, which anticipated modern phenomenological approaches. In his polemic against St. Paul's body-aversive, spiritualist doctrine, Aquinas claims that "any separation of soul from body goes against its nature and is imposed on it. (...) soul is not the whole human being, only part of one: my soul is not me."[188] In other words, to Aquinas, my soul is not a whole and true me as it was in Pauline tradition: "For Saint Paul (of Tarsus) the true Self is the new man 'called' by a personal God, hence created by a vocation; he does not fall under the yoke of the Senses like the old Adam since the new life is both in and out of the world, manifested by his love."[189] Aquinas initiated the first serious discussion on the embodied personal self. His statement is clear, and refers to its Aristotelian origins: "So if soul is deprived

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185 Josef Parvizi, Antonio Damasio, "Consciousness and the brainstem," *Cognition* 2001, vol. 79, p. 135.

186 H. Jonas, "Gehirntod und Organbank," pp. 531–532.

187 H. Jonas, "Gehirntod und Organbank," p. 532.

188 Aquinas, *Selected philosophical writings,* "The Ladder of Being," Passage 19: "My soul is not me," selected and trans. by T. McDermott. Oxford, New York, Oxford University Press, 1993, p. 192.

189 Denis de Rougemont, *The person, the angel, and the absolute, or the East-West dialogue*, pp. 191–228.

of body, it will exist imperfectly as long as this situation lasts."[190] Although the refusal of reincarnation as incompatible with the resurrection dogma was the precise background for that discussion, Aquinas is to be recognized as a pioneer of the Western concept of one's own body and embodied selfhood in at least two phenomenological aspects: namely as one's own–hence–individual body, and as an embodiment inseparable from mental and spiritual lifeforms.

In the Zen and Shinto tradition before its Westernization, as Hiroyuki Noguchi puts it, the formation of the body concept, its individuality, and identity, looked rather different. A meditative treatment of the Japanese body provides several steps to "switch from mental concentration to bodily concentration" in order to "separate the self from the body," and finally to "encounter the pure body" belonging "only to nature itself: the body 'as is'. To encounter the body 'as is' means that all sensations of the flesh disappear. What emerges instead, is a body of mist or air-like quality."[191] Its new nature "is one of total passivity; it can fluctuate with the true sense of being alive."[192] However, the life experienced is not that of an individual living organism, "but the life that flows through all beings in a world where everything is alive."[193] Opening up to the life cycle should nourish and strengthen the individual life's potentials, including the mind's creativity. That practice is more of a therapeutic than of a sacral, esoteric, or celebrative character.

In modern Western phenomenology, one's own irreplaceable body often appears in twofold meaning, such as to have the own body (however, not as a physical object, but, rather, "as a work of art")[194] and to be one's own body. The first meaning still betrays a Cartesian externalist, objectivist, and mechanical touch, although exteriority remains one of the most important body aspects in phenomenology. Ownership is also found in Husserl, as he claims "my physical body to be preoriginally mine" (*mein Leib als das ursprünglichst meine*).[195] My body was widely explored by Merleau-Ponty who claims, "I am my body, I am my life" and leaves behind us, "once and for all, the traditional subject-object dichotomy" as well as the "traditional dichotomy of body and consciousness."[196]

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190 Aquinas, *Selected philosophical writings*, p. 192.

191 Hiroyuki Noguchi, "The idea of the body in japanese culture and its dismantlement," *International Journal of Sport and Health Science* 2004, vol. 2, p. 19.

192 H. Noguchi, "The idea of the body," p. 19

193 H. Noguchi, "The idea of the body," p. 20.

194 M. Merleau-Ponty, *The phenomenology of perception*, p. 156; also *The incarnated subject. Malebranche, Biran, Bergson on the union of body and soul.*

195 Edmund Husserl, Hua XIV, 1973, p. 58; Hua XVI, 1973.

196 M. Merleau-Ponty, *The phenomenology of perception,* p. 133.

Can my body cease to be mine? Having agreed with Jonas that "nobody has the right to another person's body," it is easy to recall a number of situations in which a subject is confronted with her 'disembodiment' or "closure of the self from the body."[197] Bettelheim and Giddens refer to body and self dissociation reported by victims of tremendous horror in death camps. Biopolitical and disciplinary discourse powers may deprive persons of their inalienable right to their body. A changed feeling of the body and unusual existential feelings accompany a number of psychiatric disorders. In schizophrenia, one's own body may disappear or appear as if it is alien body.[198] At the same time, phenomenology teaches "that the bodily self is a non-thing [*Nicht-Ding*], which is never 'bodily present' [*leibhaft gegenwärtig*], as things are."[199] Furthermore, body shaming is explained as "out of the body" feeling while the latter is dominated by the oppressive body narratives or images.[200] "The body becomes the focus of power and this power (. . .) subjects it to the internal discipline of self-control,"[201] which provides the right to own body with social sanctions. This conventionalized body was told to become our social skin, typical for modernity. In her book entitled *The Body Multiple. Ontology in Medical Practice,* Annemarie Mol shows human embodiment and bodily identity (including disease, pathologies, etc.) to

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197 A. Giddens, *Modernity and self-idenity*, p. 59.

198 Matthew Ratcliffe, *Feelings of being. Phenomenology, psychiatry, and the sense of reality,* Oxford, Oxford University Press, 2007, pp. 61–64, 107–115.

199 Bernhard Waldenfels, *Phenomenology of the alien. Basic concepts*, trans. A. Kozin, T. Stähler. Evanston IL, Northwestern University Press, 2011, p. 48.

200 To what extent the individuals 'share' the right to their bodies with others was investigated by Adam Jaworski, "Talking bodies: Invoking the ideal in the BBC *Naked* programme," in: Justine Coupland and Richard Gwyn (Eds.), *Discurse, the body, and identity.* Houndmills NY, Palgrave Macmillan, 2003, pp. 151–176. The author analyzed a narrative experiment conducted by British TV on BBC2 (November 1998) in which several narrative interviews were spoken on camera and the viewer was simultaneously exposed to the narrative, the self-reflection of the interviewee's and "the images of the interviewee's naked body, usually in close up, the camera moving slowly, focusing of different parts of the body," ibidem, p. 151. The researchers' aim was to demonstrate how strongly can social expectations and biopowers (speaking with Foucault) impact the interviewees' identification with own bodies. "The speaking subject's reflexivity allows them to tackle their anxieties and uncertainties of the changing beliefs, value system, and their own shifting identities as seen and experienced through their bodies," p. 152.

201 A. Giddens, *Modernity and self-identity*, p. 57.

be "done," "enacted," constructed or deconstructed by medical practices, social representations, biopolitical and normative discourses: "The vagina for instance. This organ is no longer capable, all by itself, of turning someone into a woman. A lot more is required to *do* womanhood: specific styles of talking, ways of walking, dressing, addressing."[202]

5. Experiential Body

Husserl explored both the objective and subjective (*Ich-Organ*) aspects of one's own body in terms of phenomenological, i.e., experience-based, synthesis. According to his analysis in *Zur Phänomenologie der Intersubjektivität II*, the conscious I learns to identify her body as one's own body (*soma*) on the basis of experiencing the latter as experienced from the first-person perspective (*ich lerne meine selbsterfahrene Leiblichkeit, mein Leib untrennbar vom Somatologischen, in geistlicher Beziehung zum Ich-Organ*). However, the identification process occurs in a mediated way, i.e., by means of another bodily organ (*erst auf dem Umweg über den Andern*).[203]

Experiencing bodily reality (corporeality), identifying and recognizing it subjectively as 'my' personal body would both meet and transgress the criterion of one's own body. That criterion does not predetermine one's own body to be limited to natural or actual body landscape. It also applies, e.g., to lost organs and phantom limbs still identified or even experienced as integral parts of my body landscape, and a part of my body's functionality. With the experiential body, a novel level of body concept will be achieved. It transcends the 'preoriginally mine' corporeality and its limited, egological ontologies to finally acknowledge "that a human body is not a discrete entity ending at the skin, and that material

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202 Annemarie Mol, *The body multiple. Ontology in medical practice*, Durham, London, Duke University Press, 2002, p. 38. Also M. Shildrick contributes to the political "body becoming" (and disappearing) concepts. She analyzed both surgical cuts and bionic crosscorporealities, see Margrit Shildrick, "Staying alive: Affect, identity, and anxiety in organ transplantation," pp. 28–29. Donna Haraway, Sharon Snyder, Karen Barad belong to the same intellectual constellation.

203 Edmund Husserl, *Zur Phänomenologie der Intersubjektivität II*, Den Haag, Martinus Nijhof, 1973, p. 63, incl. footnote. The double nature of one's own body is even more complex in Husserl: the body is to be lived as both thing and functional thing ("wo er selbst als Ding erfahren ist, eben doppelt und in eins als erfahrenes Ding und als fungierender Leib erfahren ist"), Hua, XIV, p. 57.

technologies constantly disorder our boundaries,"[204] opening them to various kinds of somatechnics, and crosscorporeality. However, before addressing these new phenomena, a basic experiential body approach needs to be introduced.

To humans and probably also to a large number of animals, one's own body is a *lived, sensed*, and *experienced body* on the one hand, and living/sensing body with a huge sensorium on the other. Husserl described this,[205] in a manner impressive to contemporary scholars combining phenomenology and embodied mind theory, as follows: "When my hand touches the table and when I pay attention to the very touching, I am, after all, conscious of an *experiencing* organ and not of an *experienced* organ."[206] According to Zahavi, "the relation between the touching and the touched is reversible, since the touching is touched, and the touched is touching. It is this reversibility that demonstrates that the interiority and the exteriority are different manifestations of the same (...) Thus, it is exactly the unique subject-object status of the body, the remarkable inter-play between *ipseity* and *alterity* characterizing double-sensation, which permits me to recognize and experience other embodied subjects."[207]

The body's sensory dispositions offer plentifulness of impressions and experiences used as a measure of human wellbeing and happiness. It is not only curiosity; the idea of progress and human hubris accelerate the development of technologies and the so-called human enhancement across ages, beyond askesis, commitment, and humility. Being situated in and belonging to the world as an exploratory, agential, and interactive individual and experiencing one's body and through one's body, which can be quantified "according to the disposition of my limbs"[208] and the functionality of my body. Even in the case of passive touch, our body remains engaged and world-directed. My experiential embodiment provides "non-conceptual *feelings* of the body" such as exteroception and proprioception, which "constitute a background [existential] sense of belonging to the world and a sense of reality,"[209] and objects' presence and absence, though in some general aspect my body is "an impersonal being."[210] However, there are several special types

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204 Margrit Shildrick, "Why should our bodies end at the skin? Embodiment, boundaries, and somatechnics," *Hypatia* 2015, vol. 30, no. 1, p. 24.

205 Dan Zahavi, *Husserl's phenomenology*, Redwood City, Stanford University Press, 2003, p. 103.

206 D. Zahavi, *Husserl's phenomenology*, p. 101.

207 D. Zahavi, *Husserl's phenomenology*, p. 104.

208 M. Merleau-Ponty, *The phenomenology of perception*, p. 26.

209 M. Ratcliffe, *Feelings of being*, p. 39.

210 M. Merleau-Ponty, *The phenomenology of perception*, p. 72.

of extended or even ecological experiential body which are groundbreaking for understanding how bodily identity nowadays is evolving, transgressing boundaries, and expanding over various bodily terra incognita-like territories.

6. "… Like Organs of One Single Intercorporeality"[211]

"… what Husserl is referring to when he writes that the possibility of sociality presupposes a certain intersubjectivity of the body,"[212] initiates the phenomenological discussion around intercorporeality: interhuman,[213] biological/environmental, extended,[214] and technologically improved. That discussion is crucial to understand a series of most recent conceptualizations of the human embodiment in terms of extended, crosscorporeal, ecological, and hybrid embodiment. These concepts radically expand one's own body's ontology and establish a new epistemological framework for defining embodiment today.

It is Maurice Merleau–Ponty's theory that expands the old frame the most because being one's own body (one's "natural self") cannot be disconnected from objective and intersubjective reality. This might be Merleau-Ponty's core ontological claim; however, notions of *corporeality* and *intercorporeality* should not be reduced to materiality and mechanical connections. Rather, "to be a body, is to be tied to a certain world (…); our body is not primarily *in* space: it is <u>of it</u>,"[215] it *has* the world, as Merleau–Ponty claims. His claim sounds different than Heidegger's *Dasein* as "*in–der–Welt–sein*" but it essentially connotes a similar sense of an experiential field shared by subjects, thus, intersubjective and social. For sharing something with others requires spatiality; the intercorporeality bridges the gap between me vs. the world around, inner vs. outer, immanent vs. transcendent. According to Merleau–Ponty, "the world is wholly inside and I am

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211 M. Merleau-Ponty, "The philosopher and his shadow," trans. R. McCleary. Evanston, Ill., Northwestern University press, 1964, p. 169.

212 D. Zahavi, *Husserl*, p. 104.

213 E.g., interhuman, such as love, care, sexuality, or pregnancy, see Joan Raphael-Leff, "Two-in-one-body: Unconscious representations and ethical dimensions of intercorporeality in childbearing," in: Jonna Bornemark, Nicholas Smith, *Phenomenology of pregnancy*, Stockholm, Elanders, 2016, pp. 157–198.

214 See Christian Meyer et al., *Emerging socialities in interaction*, New York, Oxford University Press 2017.

215 Maurice Merleau-Ponty, *Phenomenology, language and society*, Portsmouth, New Hampshire, Heinemann, 1974, p. 148; see also *The primacy of perception* and "The philosopher and his shadow".

wholly outside myself."[216] Beyond "inside and outside" there is a "living cohesion" and a continuous, phenomenal "field of experience." Intercorporeality does not require shaping linear interconnections from subject to object and subject to subject. In my intercorporeal condition, Merleau–Ponty clarifies, "I am neither here nor there, neither Peter nor Paul; I am in no way distinguishable from an 'other' consciousness, since we are immediately in touch with the world and since the world is, by definition, unique, being the system in which all truths cohere."[217] That kind of coherence corresponds with Heidegger's "familiarity" and "being with,"[218] but expands them as intelligible and not experiential relations rooted in the reality of all inter-subjects. It is, therefore, not only intellectual but also a preoriginal corporeal "*Miteinander-sein*" beyond ontological dualisms such as the Cartesian *res cogitans* vs. *res extensa*. It is to bridge the gap between "internal mind and external world,"[219] which was unacceptable to Heidegger. "The experience of being *there* is not a matter of being plonked into a [fixed or determined, E.N.] spatial location but of being practically situated in an interconnected web of purposes, an appreciation of which is inseparable from practical activity. We are not *in* the world like peas sitting passively in a pod [nor are we "thrown" in the world without having any control over our position, E.N.]. Our activities and our sense of being part of the world are inextricable; the world shows up as a space of practical, purposive possibilities that we are entwined with," while to Heidegger, being–in–the–world was not a matter of intercorporeality, sharing and the "causal facilitation but of a tacit understanding that renders the world intelligible."[220] According to Merleau-Ponty, humans "knit together as a cohesive functional whole" within a shared space–time.[221] To make any experience, they need an embodiment that embraces interiority and exteriority.

For Husserl, otherness and corporeality were problems, as he was far from the idea of one world which would unify embodied minds.[222] Merleau-Ponty's account of the body is post-egological and post-dualist, as he redefined the body in terms of a mediator of the world – "a general medium for having the

216 M. Merleau-Ponty, *The phenomenology of perception,* p. 407.

217 M. Merleau-Ponty, *The phenomenology of perception,* p. xi.

218 See William Blattner, *Heidegger's Being and time. A reader's guide,* New York, Continuum International Publishing Group, 2006, p. 12.

219 M. Ratcliffe, *Feelings of being*, p. 47.

220 M. Ratcliffe, *Feelings of being*, p. 46.

221 M. Ratcliffe, *Feelings of being*, p. 44.

222 M. Merleau-Ponty, *The phenomenology of perception*, xii.

world"[223] – and a *vehiculum* of being in the world, i.e., being "intervolved in a definite environment," identifying oneself with social projects,[224] and living with living no distinction between subjectivity and objectivity, sameness and otherness.[225] "For Merleau-Ponty "we do not *have* bodies, rather 'we are our body' "[226] to be corporeally and spatiotemporally in the middle of the world, or even to generate worldliness itself.

7. Assembly, Hybrid, and Crosscorporeal Bodies

Trans- and posthumanists seem to materialize Merleau-Ponty's concept of intercorporeality on their own. They not only question, but make fluent and instant distinctions between one's own and other, between natural and artificial, organic and anorganic, beyond dualisms and binarities including engineered "as if body loop" models.[227] Although "the notion of completely rebuilding our bodies with synthetic materials, even if superior in certain ways, is not immediately compelling" ("We like the softness of our bodies. We like bodies to be supple and cuddly and warm. And not a superficial warmth, but the deep and intimate heat drawn from its trillions of living cells"[228]), new body ontologies, epistemologies, or just landscapes are explored in a huge number of publications. Many of these conceptualizations were never acceptable for Merleau-Ponty, such as "thinking 'operationally'" about the human body and making the latter into an absolutely artificial entity "such as we see in the ideology of cybernetics, where human creations are derived from a natural information process, itself conceived on the model of human machines."[229]

For thinkers of new materialities, the "underdeveloped significance of corporeality in Western philosophy"[230] of the 20th century (especially of intercorporeality) was disappointing. Deleuze and Guattari proposed new meta-ontological apparatus with their concept of "assembly" or "assemblage," later used to mediate "between self and other, or between the categories of human,

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223 M. Merleau-Ponty, *The phenomenology of perception*, p. 129.

224 M. Merleau-Ponty, *The phenomenology of perception*, p. 71.

225 M. Merleau-Ponty, "The philosopher and his shadow," p. 167.

226 Taylor Carman, "The body in Husserl and Merleau–Ponty," *Philosophical Topics* 1999, vol. 27, no. 2, p. 224.

227 T. Ziemke, "The embodied self," p. 177.

228 Ray Kurzweil, *The age of spiritual machines*, New York, Viking Press 1999.

229 M. Merleau-Ponty, *The primacy of perception*, p. 160

230 M. Shildrick, "Why should our bodies end at the skin?," p. 14.

animal, and machine,"[231] and – nowadays – between the real and hyperreal, material and virtual, amorphous and polymorphous, homogeneous and heterogeneous, symbiotic body landscapes, co- and crosscorporealities such as artificial neural networks or tissues printed in 3D technology. Some of these hybrid concepts draw from Merleau-Ponty's phenomenological assumptions (as for example, from his analysis of a body extended when driving a car, the replacement of disabled organs and functions with other organs and prostheses, and from the polysemy of intercorporeality itself). Doing so, the theorists reuse the anachronical humanistic phenomenology as a toolbox to exploratively develop radically posthuman phenomenologies in line with technological progress and transhumanist experience, which is rather more about thought experimentalism than about the real experience.

Exploring "the inherent plasticity of the body" and "the process of incorporating non-self matter"[232] makes technopoiesis and human experiences with technologies more comprehensive. It also has important ethical implications such as postconventionalism, i.e., a revision of perception and the attitudes towards human embodiment, bodily identity, and the embodied self. This has an effect on the rise of new transplant studies, new disability studies, feminist and queer medical studies.[233] The human being is a "material entity bounded by the skin"[234] but not limited by the skin, as Shildrick argues, because "we are bodies in technologies."[235] Hence, "the singularity and purity of the [embodied, E.N.] subject cannot hold."[236] It does not sound as if it is in harmony with Jonas' concept of

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231 M. Shildrick, "Why should our bodies end at the skin?," p. 15. For more about amalgamations, "machinic assemblage" and "interassemblages," "becoming animal," "becoming imperceptible," and just becoming beyond being see Gilles Deleuze, Félix Guattari, *Anti-Oedipus: Capitalism and schizophrenia*, London, Athlone Press, 1984; also *A thousand plateaus: Capitalism and schizophrenia*, Minneapolis, University of Minnesota Press, 1987, p. 232 f.

232 M. Shildrick, "Why should our bodies end at the skin?," p. 16.

233 Including new digital disability studies, see Patricia da Silva Leite, Deborah Andrade Torquato Schimidt, "Rethinking digital games in a critical and participatory perspectives. A brief reflection," *Ethics in Progress* 2019, vol. 10, no. 2, pp. 112–117, doi 10.14746/eip.2019.2.10; also Deborah Lupton, Wendy Seymour, "'I am normal on the net': Disability, computerised communication technologies and the embodied self," in: Justine Coupland, Richard Gwyn (Eds.), *Discourse, the body, and identity*. New York: Palgrave Macmillan, 2003, p. 247.

234 M. Shildrick, "Why should our bodies end at the skin?," p. 15.

235 M. Shildrick, "Why should our bodies end at the skin?," p. 16.

236 M. Shildrick, "Why should our bodies end at the skin?," p. 17.

organic identity, which suggests that our technoorganisms "are not solid bodies as such, only becoming bodies,"[237] even if such developments are sometimes unavoidable. Although being a part of medical humanities, the new transgressive concept of human embodiment is imbued with techno-posthumanist[238] and ecological features.[239] A symbiotic coexistence with organic and anorganic others is no longer challenging for our skin, as the skin barrier was breached a long time ago in transplantology and implantology.

Scholars also argue that the rise of a posthuman *Dasein* would result in self-instrumentalization, passivism and being managed by means of heteronomous tools whose original function was to expand, intensify, and enhance human autonomy, and whose potential is greater than an individual could ever realize as having limited physical capacities only:

> New technologies not only open up new spaces of possibilities for our doings; they also make us see things in new ways. Heidegger's way of putting this is to say that modern technology 'reveals' the world in a certain way; it makes the world appear as a 'resource' (*Bestand*) (...) the instrumental essence in Heidegger's version considers not only the way technology becomes a means in human projects but also the way technology dominates the goals of human projects, changing our views on what is worth pursuing in the first place,[240]

and what is not. The next stage of embodied self evolution begins, and technologies dominate individual, social, and institutional decision making more and

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237 M. Shildrick, "Why should our bodies end at the skin?," p. 18.

238 M. Shildrick, "Why should our bodies end at the skin?," p. 21.

239 The term 'ecological self' can be used in two different ways. Firstly, according to the cognitivist approach, the ecological self is "the self as we directly perceive it, situated in the real and immediate environment (...) To perceive is to find out about one's local situation by picking up information that specifies I," Ulric Neisser, "The ecological self and its metaphors," *Philosophical Topics* 1999, vol. 26, no. 1/2, pp. 201–203; also idem, "Two perceptually given aspects of the self and their Development," *Developmental Review* 1991, vol. 1, pp. 197–209. Secondly, according to the environmentalist phenomenology, biosemiotics and ecoposthumanism, the earth (*oikos*) is not only our habitat, but also extension of our selves, see Sally Fischer, "Social ecology and the flesh: Merleau-Ponty, Irigaray, and ecocommunitarian politics;" also John R. Whine, "Lived body and ecological value cognition," both in: Suzanne L. Cataldi, William S. Hamrick (Eds.), *Merleau-Ponty and environmental philosophy*, New York, State University of New York Press, 2007, pp. 177–191, pp. 203–216.

240 Fredrik Svenaeus, "The relevance of Heidegger's philosophy of technology for biomedical ethics," *Theoretical Medical Bioethics* 2013, vol. 34, p. 4.

more. They change the trajectories[241] of individual ontogenesis, human development, and socialization.

On the other hand, developing novel bodily identities defined as transhuman or posthuman is nothing new to a creative and autocreative, poietic, and autopoietic being such as the human being. Human beings with their peculiar potentialities and position on the edge of the natural world ("*der Mensch als biologisches Sonderproblem*" in Arnold Gehlen or "*das nicht festgestellte Tier*" in Nietzsche) just continue to create their "life field"[242] (*Lebensfeld*) using their genius, artistry, and tools. "Does it not signal that we are after all in control of our bodies, compliant with the governing rules and conforming to the demands of Western selfhood?"[243]

8. Hyperreal (Phantom) Body

Hypperreality is a phenomenon related to virtual representations of an "embodied persona" or someone's "personal profile of preferences, behaviors, and history," "created, managed, and used"[244] on the basis of new digital technologies. Strictly speaking, the virtual body is about information, data generated reality, web, etc., beyond the material and organic body's reality. "Here is a danger that we will lose the ability to define ourselves, having surrendered the definition of ourselves to the data gathering entities, often unregulated and beyond our control,"[245] as Langenderefer and Miyazaki warned a decade ago. This kind of body seems radically posthuman and can be defined as an avatar or mavatar whose core experiential quality is visual, imaginary, phantom-like. Its life within a virtual space and its visual nature can be related to the Platonic *idea* rooted in vision (thus not only in an intellectual, abstract concept), especially if one is considering the revival of the idea in Neoplatonism. In *De Principiis*, Origen attributed the *eidon/eidos* (also called *eidolon* by Gregory of Nyssa and Synesius) to every single human

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241 See Walter T. Anderson, "Trajectories. Augmentation, symbiosis, transcendence: Technology and the future(s) of the human identity," *Futures* 2003, vol. 35, pp. 535–546.

242 This originally Nietzschean view was developed by Arnold Gehlen in: *Der Mensch. Seine Natur und seine Stellung in der Welt*, Wiesbaden, Aula Verlag, 1986.

243 M. Shildrick, "Why should our body end at the skin?," p. 20.

244 Brian Mennecke, Anicia Peters, "From avatars to mavatars: The role of marketing avatars and embodied Representations in consumer profiling," *Business Horizons* 2013, vol. 56, p. 391.

245 Jeff Langenderfer, Anthony D. Miyazaki, "Privacy in the information economy," *The Journal of Consumer Affairs* 2009, vol. 43, no. 3, p. 384.

body. He argued *eidon* to be a pure, innocent, preoriginal, and eternal pattern or image of our natural and, as a consequence, imperfect, and sinful embodiment (see the term glorious body in the next section). "*Eidos* is thus the image, unchangeable, spiritual (. . .) – of the material body, imprinted in the soul. The image/idea does not change, having been shaped in some stable form, notwithstanding any changes that body could pass through. Because of this image, the individual soul keeps its inclination towards the body long after it dissolves into its composing elements. . ."[246] after death. As humankind has advanced imagery technologies at her disposal, creating images of one's own perfectioned physiognomy and re-identifying with it rather than just with a faithful reproduction of one's own embodiment can be explained with secularized eschatologies such as that of Neoplatonism – however, other explanations are possible. An eschatological explanation would provide the evolving body concept with paradoxical traits, as we used advanced technologies, including radically posthumanist ones, to achieve humanity's archaic goals, such as perfection, innocence, immortality, and glory crossways of the finite, vulnerable and imperfect physical condition. But considering phantom bodies and the simulacroid faces displayed on the screens of digital devices, one also confronts the opposite of such maximized entities (as the idealized, perfected, immortalized human beings are representative for that ontological category) which, at the same time, are ephemeral. The body, the face, "what a horror. . . In truth, there are only inhumanities. Humans are made exclusively of inhumanities,"[247] disembodiment and defacialization, as Deleuze and Guattari put it: ". . . people learned to steer the face and processes of facialization in all directions."[248] The same applies to the entire body and the processes of incarnation (and disincarnation). We could continue exploring that kind of body, but it seems already overexplored. Much more was anticipated and projected in the posthumanities than has been achieved by means of technological progress and the regression to our animal and "primitive inhumanity,"[249] which remains beyond the scope of this book.

Also, a discourse body theory cannot be taken into account here. Biopolitics and critical theory seem a more appropriate context to analyze that theory. According to Cream, we "should not be accepting our body as given, as natural,

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246 Jean-Marc Narbonne, "Matter and evil in the Neoplatonic tradition," in: Pauliina Remes, Svetla Slaveva-Griffin, *The Routledge Handbook of Neoplatonism*, New York, Routledge, 2014, pp. 231–244.

247 G. Deleuze, F. Guattari, *A thousand plateaus*, p. 190.

248 G. Deleuze, F. Guattari, *A thousand plateaus*, p. 179.

249 G. Deleuze, F. Guattari, *A thousand plateaus*, p. 190.

as pre-discursive, or prior to culture. The body is not a foundation. It is not a bio-logical bedrock upon which we can construct theories of gender, sexuality, race and disability. The body is not a beginning. It is not a starting point."[250] Cream's viewpoint illustrates a radical, deconstructive approach to human corporeality. A narrative body theory seems to contrast with a discourse body theory because of its therapeutic focus on the "nonverbal narratives"[251] and "nonverbal terms"[252] generated by the body.

9. Sacrosanctity, the Glorious Body, and the Body's Revaluations ("*das Leibapriori*" in Traditional and Posttraditional Cultures)[253]

The principle of sacrosanctity (integrity or *Sakrosanktheit*) was to prevent the instrumental treatment (*als blosses Mittel*) of tissues, organs and organic body including their 1. reification and commercialization to enhance life prospectives or the reincarnation of the economically privileged,[254] 2. machinery-like application and instrumentalization by other users, industrial or political systems, and 3. everyday usage as a toolbox and the vehicle of the first-person phenomeno-logical experience. "The machine part is *nothing but* an organ, but you can take it out of the machine, and you have a thing apart."[255] Though the term *organon* literally "means tool or instrument," we use our bodies and need their dexterity, and, simultaneously, we *are our bodies* and we are embodied as real and physical selves.

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250 Julia Cream, "Out of place," Paper presented at the annual meeting of Association of American Geographers. San Francisco, March-April 1994, p. 2, after Hester Parr, "Bodies and psychiatric medicine: interpreting different geographies of mental health," in: Ruth Butler, Hester Parr (Eds.), *Mind and body spaces*, London, New York, Routledge, 1999, p. 200.

251 Richard G. Erskine, "Nonverbal stories: The body in psychotherapy," *International Journal of Integrative Psychotherapy* 2014, vol. 5, no. 1, pp. 21–33.

252 Christine Caldwell, "Mindfulness and bodyfulness: A new paradigm," *Journal of Contemplative Inquiry* 2014, vol. 1, no. 2, p. 89.

253 Dietrich Böhler, Einführung in die Kritische Gesamtausgabe, Hans Jonas, KGA, I/1, xxvii.

254 Though transplantation and implantation technologies make a "social reincar-nation" possible, see Gillian Einstein, Margrit Shildrick, "The postconventional body: Retheorizing women's health," *Social Science & Medicine* 2009, vol. 69, p. 295.

255 H. Jonas, *Leben und Organismus – Life and Organism,* p. 372.

Because of their intrinsic, natural, self-confirming dignity, there is no place among living individual organisms for human or animal machines[256] unless their original functionalities were lost or disabled.

Despite sacrosanctity, which restricts the way a human body is to be used and which contrasts with La Mettrie's *L'homme machine* (1747) body paradigm popular among the contemporary techno-posthumanists, ancient and medieval religious anthropologies created the ideal of the glorious body. According to Origen, the human body's physiological functioning demonstrates the perfection of the divine creature (although the latter has been created as a creative creature, too). After certain ritual purity and askesis rules have been applied, the natural body 'as it is' and its advantages can be celebrated. "In the glorious body it became possible for the first time to conceive the separation of an organ from its physiological function,"[257] as well as practical and instrumental exercise. "In its place, we find glory, understood as an isolation of inoperativity in a special sphere,"[258] for the glory of the Creator (*Dei gloriam*). The glorious body was celebrated during holidays by abstention from working and exercising one's own body in many practical areas, aiming at the body's vegetative functionality, everyday utility, and productivity. We can identify these areas in Jewish, Christian, and Buddhist traditions. Agamben explored the rituals of body glorification in several contexts, including the recovery of natural resources and "glorious defecation."[259] The rules of the glorious body are not about prohibiting a body's physiological and practical functions, or to make its organs inoperative. Limitation rather means providing them with their intended ritual and symbolic use. For example, it was recommended to have sexual intercourse on the Sabbath Night so as to reorient sexual activity towards the fertilization act in which the Creator is considered to be the third actor. However, "there is perhaps nothing more enigmatic than a glorious penis, nothing more spectral than a purely doxological vagina."[260]

But first of all, it was suggested that one should be prepared for a messianic experience, that is, to leave the ordinary world and open oneself to *sacrum*. In Christian contexts, such a stripping of everyday purposes, functions, and garments (to replace the latter with clean and festive ones) is supposed to demonstrate one's willingness to confront not only sacrum's proximity but to fit the

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256 H. Jonas, *Leben und Organismus – Life and Organism*, p. 316.
257 Giorgio Agamben, *Nudities*, trans. D. Kishik and S. Pedatella, Redwood City, Stanford University Press, 2011, p. 100.
258 G. Agamben, *Nudities*, p. 100.
259 G. Agamben, *Nudities*, p. 101.
260 G. Agamben, *Nudities*, p. 99.

criterion of *eidos*, that is, a preoriginal and ideal image of a personal body, as proposed by Origen.[261] Therefore it was not natural nakedness deprived of grace, but, on the contrary, "the supernatural garment of glory,"[262] a true garment for a true embodied self[263].

"To use the body and to make it serve as an instrument for a particular purpose, are not the same thing (...) Rather, at stake here is the rendering inoperative of any activity directed toward an end,"[264] Agamben emphasizes, i.e., to release bodily activity from natural teleology and everyday productive usage. The glorious, festive body "is not some other body, more agile and beautiful, more luminous and spiritual; it is the body itself" liberated and opened "up to a new possible common use,"[265] including being admired for its pre-original excellence as if on the day of its divine creation. Agamben's intention was also to demonstrate the evolution of the glorious body to the profane body celebrated today mostly in empty, i.e., purely ornamental and erotic contexts.

The body and physiognomy's 'profanation' described by Agamben and Lingis must not imply their devaluation, though it implies ambiguity. By contrast, Shildrick, Mykitiuk, Einstein, and other scholars report on the body's revaluation and postconventionalization[266] with implications for bioethics, medical ethics, social ethics, and legal conventions. Such ethics are, for example about de-heroization and the de-celebritization of human-cyborg bodies and otherwise technologically enhanced bodies. In particular, it is about "the lived experience of disability" generating "its own special possibilities that both limit and extend the performativity of the embodied self"[267] and "the prostheticized body is a rule, not the exception"[268] (thus against "disability as moral

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261 G. Agamben, *Nudities*, p. 93. Instead, in Sufi tradition there is no eidos, but a personal angel: "there is a spiritual being which (. . .) is called Perfect Nature," D. de Rougemont, "The person, the angel, the absolute", p. 195.

262 Erik Peterson, *Theologie des Kleides*, here after G. Agamben, *Nudities*, p. 60.

263 G. Agamben, *Nudities*, p. 62.

264 G. Agamben, *Nudities*, p. 102.

265 G. Agamben, *Nudities*, p. 102.

266 See Margrit Shildrick, Roxanne Mykitiuk (Eds.), *Ethics of the body. Postconventional challenges*, Cambridge, London, The MIT Press, 2005.

267 M. Shildrick, "Why should our bodies end at the skin?," p. 13.

268 David Mitchell, Sharon Snyder, *Narrative prosthesis: Disability and the dependencies of discourse*, Ann Arbour, University of Michigan Press, 2000, p. 7; see also Karen Barad, "Posthumanist performativity: Toward an understanding how matter comes to matter," *Signs* 2003, vol. 28, no. 3, pp. 801–831.

evaluation,"[269] pathologization,[270] oppression, and exclusion of persons with disabilities), about (not only technologically generated) corporeal complexity, diversity, queering body, and crosscorporeality.

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269 Jackie Leach Scully, "Admitting all variations. Postmodernism and genetic normality," in: M. Shildrick, R. Mykitiuk (Eds.), *Ethics of the body*, p. 57.

270 Including "normal, everyday apotemnophilia" and acrotomophilia, prosthetic body, athletic body, etc., see Alphonso Lingis, "The physiology of art," in: Marquard Smith, Joanne Morra (Eds.), *The prosthetic impulse: From a posthuman present to a biocultural future*. Cambridge, Arteca/The MIT Press, 2006, p. 73 f.; also Ewa Nowak, "Ciała w glorii. Z antropologicznego archiwum estetyzacji," *The Polish Journal of Aesthetics* 2017, vol. 42, no. 2, pp. 103–117, and, "Antropologia niepełnosprawności: narodziny, schyłek i odrodzenie paradygmatu," *Ruch Filozoficzny* 2017, vol. LXXII, no. 3, pp. 137–157 (both papers related to this research project).

III. Body Representationism Between Permanent Loss and Recovery of the Identity

1. Body Representation Then and Now

Humans achieve a twofold somatic self-identification, e.g., body image and body schema. On the basis of visual, tactile, and other kinds of sensory perception, humans deal with their body's surface, and all the qualities of their physiognomy as corporeal living beings and embodied selves as well, i.e., with their manifest outer presence, location in the world, intercorporeality, and, finally, crosscorporeality and spectral reality. Even disembodied, philosophizing[271] entities sometimes manifest features such as posture, skin texture and color, facial expressions, mimicry, gestures, size difference (e.g., between weight loss and weight gain), gender marks, ethnicity, and further detailed traits of body surface also contribute to our body representation. It is philosophy of mind and phenomenology that pioneered research on our somatic self-identification conditioned by visual and tactile/haptic perception, resulting in the claim that there is an assembly of morphemes, organs, physical qualities, looks, etc. that I experience as *mine*. Claiming "I am my body" and "the body is a natural self and, as it were, the subject of perception"[272] are phenomenological conclusions made in the face of experiences such as spontaneous motility, reflexive or intentional activity and reactivity, etc. Phenomenology, anthropology, and the cognitive sciences are highlighting that our own body image and body schema also need not be integral, holistic, or absolutely rigid. Early Greek artistic and literary representations suggest their fascination with fragmented bodies and physiognomies. According to Snell, the Homeric body was not conceptualized as an "organic unity" nor "*qua* body, but merely as the sum total of his limbs"[273] – one more prerequisite for the historicity of body image. The idea of integrity and the importance of human physiognomy was born together with

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271 See P. du Bois, *Sappho is burning*, p. 75.

272 M. Merleau-Ponty, *The phenomenology of perception*, p. 206. According to R. Shusterman, Merleau-Ponty only minimally addressed our perceptual, conceptual (especially conscious), interpersonal and practical relations to soma and physiognomy, see Richard Shusterman, *Body consciousness. A philosophy of mindfulness and somaesthetics*, op. cit.

273 Bruno Snell, *The discovery of the mind*, Oxford, Basil Blackwell, 1953, p. 8.

the magical and religious topos of physiognomy divination, natural ("unprovoked") or artificial ("provoked").[274] In about the second millennium BC, many Mediterranean cultures (but not all) learned to examine personal physiognomy "as a signifier" and *vehiculum* of supernatural, eschatological, and messianic meanings, developing precise biometric instruments and giving birth to such disciplines as physiognomics, biometry, and body conventionalization. In general, all those disciplines focused from outside on manifest physiognomy, doing so in a holistic way and producing "the physiognomic descriptions of 'ideal types' of individuals. These descriptions of the human body are structured according to the *a capite ad calcem* principle, i.e. they run from head to toe,"[275] and they seek indications of people's attitudes, characters, ethnic origins, etc., as Popović shows. The pseudo-Aristotelian *Physiognomica* anticipated the contemporary psychosomatic and phenomenological approach to the embodied self, as one may read there that the "soul and body react to each other; when the character of the soul changes, it changes also the form of the body, and conversely, when the form of the body changes, it changes the character of the soul (...) Now if this is true (and it is invariably so), then it should be possible to physiognomize."[276] There is a lot of textual evidence for human beings' interest in their bodily representations, and there is enough experiential evidence to claim that events such as learning how to dance, playing an instrument in an orchestra, navigating such a huge vehicle as a transoceanic liner and confronting dysmorphic disorder – and experiences such as having an allograft transplant, intelligent prostheses, and physical modifications which provide us with neomorphic bodies – strongly challenge a person's "natural" body representation, so that one may assume that body image and body schema are parts of our identities evolving under human technesis. However, there is no strict distinction between the humanizing impact of technologies on the human species in the process of making itself increasingly different to other natural species, and creating its own, human (or at least hyphenated, e.g., animal-human) lifeworld whose nature is both cultural and artificial. We are continuously generating and engineering our world to humanize our being-in-the-world (*Humanisierung of Daseins*),[277] and that has a strong impact on all the layers of body representation. Let us

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274 Mladen Popović, *Reading the human body*, Leiden, Brill, 2007, p. 76.

275 M. Popović, *Reading the human body*, p. 28.

276 Aristotle, *Physiognomica* 808b 11–14; 805a 18, after M. Popović, *Reading the human body*, p. 71.

277 See Alois Huning, *Das Schaffen des Ingenieurs. Beiträge zu einer Philosophie der Technik*, Düsseldorf, VDI Verlag, 1974, p. 207.

try to detect a breakthrough in our own body representations, where human-ization transforms into post-humanization or dehumanization. Does it happen only when a human being becomes a "neohuman," i.e., when, having had her entire previous body 'amputated', she receives a hybrid, genetically engineered embodiment,[278] or has it already occureed when a human begins to imitate and to respond to the behaviors of artificial devices, when such a novel habituation deprives her of her originally human, or at least personal, habits? Is a bionic man still human, or is he already transhuman? Or, is it rather the case that embodiment is an integral part of the mind, and the mind is an integral part of embodiment, whereas all the secondary, artificial replacement parts, extensions, improvements, etc. belong instead to the landscape of *soma*? Supposing this is so, how can they be integrated with one's *own* body image and one's own body schema as well? There is a convincing answer to this question, suggested by Hans Jonas: our body representations involve more complex content, shape, facets, and potentials than a simple mirror image, and they are not inflexibly assigned to a body. It is plastic–vulnerable and, simultaneously, tractable. It is much more an open microcosm than a body itself. One of the first implications of the perma-nent impact of technopoiesis on body image is that an inherent somatic equilib-rium no longer matters or was lost. There was some equilibrium in our *natural, human* bodies, according to Leonardo da Vinci.[279] This is no longer the case with our *techno* bodies.

Semantically, the term 'natural' is to be interpreted as *belonging to natural, empirical, experiential reality*, and *being corporeal*. Although our natural self, i.e., our living and lived body, is not only an object we have and which we apply as an instrument, but it is also a vehicle of *our subjectivated being* in the world. Body image and body as a corporeal entity are distinct phenomena, and their relation-ship is not that of mirror and original. A body image based on the testimonies of the senses of sight, hearing and touch can, in extreme cases, despite having such powerful experiential foundations, be almost completely detached from its bodily prototype, and live its own life, detached from actual and authentic

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278 As already shown in previous chapters, see also T. R. Brown, *The face in the mirror. A transhuman identity crisis*.

279 "If the body was dominated by zodiacal influences (...) only someone proficient in astrology could ensure the maintenance of bodily equilibrium," Martin Kemp, *Leonardo da Vinci. The marvellous works of nature and man,* New York, Oxford University Press, 2006, p. 139. Nowadays, people rather believe in somatechnics and somaesthetics as strategies to maintain bodily equilibrium, but they only seldom find their body image equilibrium.

perceptions,[280] kept alive by sociocultural imagery and a person's imagination. To some extent, my own body image is a product of my mind, and to some other extent it is a product of other persons, social discourses, expectations, ideologies, conventions, etc. I share it with other spectators, as almost all manifest attributes are constantly processed, mediated, reshaped, and reattributed to 'me.' This occurs within perceptual, narrative, and discursive interrelations, as well as within practical[281] interactions with at least three kinds of environmental factors intertwined: natural, socio-cultural, and technological. The relational, constantly redistributed, reformed, and shared nature of my self increases in the era of advanced technopoiesis.[282] As a result, from the very beginning one is an environmentally involved and socially networked perceiver of one's own bodily individuality. Despite this contextual nature of self-perception, the latter "is not something rare and unusual."[283] According to Gibson, "egoreception accompanies exteroception like the two sides of a coin (...) One perceives the environment and coperceives oneself."[284] The ecological paradigm of the self is a relevant contribution not only to the cognitive sciences, but also to the perception of extended and modified body, for example by persons with physical disabilities equipped with intelligent prostheses, and persons with artificial devices extending their functionalities.

Except for the contents mentioned above, body image involves conceptual, ideal, and abstract facets. The genuine notion of *idea/eidon* has no longer just a double meaning – today it has a triple meaning: 1) image, 2) concepts, ideals, shapes expressed in a narrative way, e.g., the storied and re-storied, imaged or re-imaged body; 3) virtual imagery media creations, filters, and illusions: they provide an alternative to the entire culture of perception and depreciate

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280 See U. Neisser, "The ecological self and its metaphors," and "Two perceptually given aspects of the self and their development."

281 The narrative with its huge representational and propositional potentials is too "practice" for from preverbal infancy to the end of our life we undergo a series of socializations reshaping both our bodily condition and own body image, see Peggy J. Miller, "Narrative practices: Their role in socialization and self-construction," in: U. Neisser, R. Fivush (Eds.), *The remembering self: Construction and accuracy in the self-narrative.* Cambridge University Press, 1994, pp. 158–179.

282 See Craig R. Barclay, "Composing protoselves through improvisation," in: U. Neisser, R. Fivush, pp. 55–76.

283 U. Neisser, "The ecological self and its metaphors," p. 203.

284 James J. Gibson, *The ecological approach to visual perception*, Haughton Mifflin, Boston, 1979, p. 126.

immediate sensuality.[285] The human mind is fitted with the ability to focus on all three aspects and to derive an image from its concrete bodily referent. This ability can be compared to what Hans Jonas calls the *pictorial faculty*. This entails that we design and re-design, story and re-story own and other persons' bodies. We also appraise appearance, figure, body proportions, qualities, skills, strength, size, height, and motions, that is, bodily condition, as Alphonso Lingis does in his essay "How One Feels, How One Looks" (2005). The body as a shaped matter and a fixed, motionless, passive material object does not speak; it is unable to story itself. Despite this passivity, narrative somatherapy advocates the non-verbal, direct narratives "generated by the body."[286] According to Gallagher and Hutto,[287] there is no link between body sensations and any consistent semiotics. Rather, the body narrative consists of incoherent autoreferring symptoms.

A body in motion, a body that behaves, acts, and interacts with its environment, seems to "speak" in its peculiar, individual, or even private language. Sometimes it repeatedly finds proximity to another body to learn and follow its language and game rules. It develops choreographies: some of them are just specific for humankind, some others are culture-related, or typical for a given social practice, or truly original and unique. Learning how to dance and developing one's own artistic style of dancing are two very different stages of the same practice, and two different contributions to one's own body image (and body schema as well). Performing professional activities and following social conventions also contributes to the own body image as a dynamic, interactive phenomenon. The term "interactive" means interactions with material environments, instruments, devices, etc., as well as those with other intelligent agents, social institutions, etc.

The ability to narrate over that dynamic bodily phenomenon and to produce body pictures, e.g., drawings, photographs, virtual profiles, and other "representational artifacts," as Gallagher and Hutto put it, may also empower the body image. We can permanently restory our bodies, and the plot of experiences, perceptions, and other episodes around our body evolves all the time. However, body narratives, pictures, profiles, etc. can exist without their original corporeal referents. They can even be shared by more than one person and other

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285 Gernot Böhme, *Invasive Technisierung. Technikphilosophie und Technikkritik,* Kusterdingen, Die Graue Edition, 2008, p. 350; also K. Wiegerling, in: Ch. Hubig, A. Huning, G. Ropohl (Eds.), *Nachdenken über Technik*, p. 419.

286 Ch. Caldwell, "Mindfulness and bodyfulness: A new paradigm."

287 Shaun Gallagher, Daniel Hutto, "What's the story with body narratives? Philosophical therapy for therapeutic practice," *Academia.edu* (last accessed on December 11, 2017).

"users," including virtual and robotic. According to Mennecke and Peters, "the term mavatars is specifically used to describe the biometric representation that is used for the particular function of representing the embodied persona, which includes not only the biometric data about the target but also the behavioral and contextual profile that defines the user's identity from the vendor's, marketer's, or system's perspective. As such, mavatars are more than merely biometric data; it is the 'package' that comes with building a biometric profile associated with the user's personal profile of preferences, behaviors, and history." A mavatar – the authors continue – can be freely "created, managed, and used"[288] by profilers. Body images also get institutionalized, as soma-techniques, soma-aesthetics, and soma-normativities (such as *dress code*, dietary or gym discipline which sometimes determine social inclusion or exclusion)[289] show this. Sometimes they support individual somatic identity, sometimes they don't. Some narratives and discourses imply objectifying, normalizing, persuasive, manipulative, discriminative, and oppressive (social, cultural, legal, political, and even cosmopolitical) discourses. A powerful body discourse is strong enough to reshape personal bodies, or even to disinherit preoriginal owners from their ownership: "Culture critics call it a strategy to change the image, and thus the status (...) – an operation of empowerment, a politics."[290] In order to strengthen ourselves in our natural right to own body, one should avoid all kinds of reification, e.g., living one's own body as an object, instrument, and property, and start living it more subject-like, with implications for body image and body narratives. Otherwise one's body image – and the body itself – would become a "social body" and "body politic," or it would absorb imaginary elements of cultural, medical, and gender body policies, or it would mirror our body state from the past, as it was memorized years ago with no update from current body perceptions and experiences. A political body image may imply depersonalization or even a reduction to a "brute body" and "passive and material container."[291] To be a core, integral part of self and identity, it should remain as authentic as possible.[292] This is exactly what

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288 B. Mennecke, A. Peters, "From avatars to mavatars," p. 391.

289 As for example. vegetarian and organic food which is popular in academic circles, and which marginalizes those who neglect own bodily condition, outfit etc., manifesting in this way their loss of self-control, low self-manageability, etc.

290 A. Lingis, *Body transformations*, p. 49.

291 Ch. Gärtner, "Cognition, knowing and learning in the flesh," p. 345.

292 Bodily inheritance based on dissociation between the true (core) self and an alienated, anonymized body image governed by others may imply schizophrenia-like experiences, as J. Parnas et al. emphasize in "EASE: Examination of Anomalous Self-Experience," pp. 236–258.

is challenging for contemporary people: how to preserve bodily authenticity and resist the body imagery powered by advanced technologies?[293] Humanity is used to observing, reading, assessing, and measuring the body as our exterior being. Lingis created an adequate phenomenological self-narrative schema just to approach how such elements delude our soma-aesthetic self-awareness and how they upset personal self-esteem. This schema confirms my previous hypotheses: 1) a body representation incorporates the inherent tendency to break away from the bodily referent and live its own life – increasingly often; 2) life can be someone else's and alienated because it's not our own perception or even imagination that contribute to our own body image; and 3) this body image, which lives its own life, but also a bit of someone else's, is able to nest itself in our consciousness, to continue its transformation under the influence of the environment, media, technology; and finally, 4) such a body image can have an oppressive impact on the sense of somatic identity, as it is attached as a "correction" to the practices and techniques through which we refer to our own embodiment. Perhaps the majority of people perceive their body through a filter, in other words the image that is imposed on the current, everyday perception of themselves. The power of this image can be so overwhelming that it negates and invalidates the current appearance produced by the mind, based on the data provided by sight, hearing, and touch:

> Our bodies continually visualize themselves. Psychologists have studied the 'body image' – that quasi-visual sense of that our body has of itself, which does not necessarily coincide with the objective size and shape of the body – that is, the others' perceptions of it: an amputee has a phantom limb, an anorexic sees herself as fat. It is (...) a postural diagram of that body (...) A body on the bed, its limbs settling by gravity, its postural axis contracted into the orientation and focus of the eyes only, generates a quasi-visual image.[294]

Shusterman and Lingis consider both body representations that are adequate to sensual testimonies and body (and bodily competence) representations that depart from the perceptions that can be described as authentic and realistic. Additionally, Shusterman refers to Simone de Beauvoir, who stresses the emancipatory "power and efficacy" of "increased bodily competence,"[295] particularly

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293 As already mentioned above, natural body imagery, also named "morphoscopy" and "physiognomics," was popular across ages and cultures, see M. Popović, *Reading the human body*; also Sarah Lamb, *White saris and sweet mangoes. Aging, gender and body in North India*, Berkeley, Los Angeles, London, University of California Press, 2000.

294 A. Lingis, *Body transformations*, p. 53.

295 "...women can attain a better body image that gives them more confidence to act assertively and overcome the timidity that Beauvoir sees as enslaving them. Such

in women, seniors,[296] persons with disabilities, etc. However, increasing bodily competence may result in disempowerment and further ambiguous results. In the diagnostics of the mental (especially cognitive) causes of anorexia and bulimia, there is a famous experiment involving the use of the sense of sight, in which patients lie on the floor or lean against the wall, and the doctor draws the contour of their body with chalk. Confronted with the size of their body, the patients are most often surprised that this size is much smaller than the size of the body image that they had fixed in their minds. Another experiment involving the sense of touch involves patients first touching 3D spatial figures and then being asked to draw them on a 1:1 scale. Those who draw objects of sizes different from their natural size turn out to suffer from impaired perception of their own body.[297] Lingis moves smoothly from visual perception to proprioception, from body

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represented body power and the confident attitude it inspires will also be perceived by men who may then be more disposed to respect these women as powerfully competent. Moreover, since increased bodily competence gives women greater efficacy in performing what they wish to perform, it will also boost their self-assurance for more ambitious projects of engagement with the world. In short, performative-representational somaesthetic activities oriented toward displaying power, skill, and an attractively dynamic self-presentation should promote Beauvoir's goal of promoting women's confidence for engaging in greater action in the world," R. Shusterman, *Body consciousness*, p. 90. However, to Beauvoir who was strongly influenced by Sartre, the human body and the "biological condition" as such belong to "passive immanence," not to the "dynamic," "transcending," project- and activity-oriented "ego," p. 110.

296 ". . .it shows that somaesthetic attention is needed to develop new images of vigorous and able-bodied good looks that are appropriate for seniors, while also exploring the best methods to realize them in practice," and to improve "functional potency," "somatic skill," "body's autonomous power," "healthy vigor," "energetic well-being" and "social authority" in seniors, R. Shusterman, *Body consciousness*, pp. 104–109. Shusterman's broadly conceptualised performative/experiential somaesthetics offers a link between body perception (body image) and proprioception (body schema) as being rooted in phenomenology, including the link between outer/inner.

297 Among manifold approaches to anorexia, that of Giddens unveils its "post-traditional," paradoxical, body image (somaesthetics) and self-denial related aspects. Following Orbach, Giddens regards anorexia as a form of contestatory lifestyle "characterised (...) by a sustained engagement with the reflexivity of bodily development (...) The body regimes of anorexic individuals are often extreme. A person may, for example, run for several miles, take part in a punishing and lengthy exercise machines (...) There is 'an urgency and strength' in the ascetism of anorexia, which is thus more to do with the self-denial *per se* rather than with a body image of slimness," A. Giddens, *Modernity and self-identity*, pp. 106–107.

image to body schema (which may be legitimate from a phenomenological point of view, but is not entirely correct from the point of view of cognitive science), and, finally, to complex existential feelings. He shows how the 'inner' diagnostician works in everyday self-experience, functioning and malfunctioning, abled and disabled, relaxed and fatigued, trained and untrained, perfect and imperfect, natural and technologically enhanced:[298] "When her body is functioning normally, the inner feeling she has of it is vague and stale (...) The undifferentiated and stale feeling is what she wakes up to each morning and immediately recognizes. It is what makes her feel that she is still herself."[299] How is such a look/feel from inside possible? It was described in the new phenomenology and neurocognitive theory: they both argue for a dual-layer bodily structure and the resulting dual-layer experience. This experience is only possible as an interplay between inside and outside, inner and outer, living and lived, experiencing and experienced, subjective and objective aspects of the human body, as a highly intelligent agent's embodiment. For Persson, "it is because one's proprioceptive or somatosensory awareness is an awareness not just of surfaces, but of this 3D solidity, that one can feel bodily sensations – like pains and pangs of hunger – inside one's body, somewhere in-between where one feels."[300]

The body's 'normal' state[301] means that no change is perceived in the body by one's proprioceptors. The body disappears from one's actual experiential horizon. In contrast, through excessive physical efforts, movements, impairments, and ailments, *changes* can be noted. Usually, such occasional changes do not revise our lasting body image, which is resistant to temporary changes. However, as was previously mentioned, the medical sciences are familiar with the *resistance* of a personal body image to realistic body size and attribute this to *anorexia nervosa*.[302]

Managing a body image *in abstracto* and plasticizing was already known in pretechnological cultures. According to Nicholas Vlahogiannis, "clothing and make-up will change appearance temporarily. Permanent forms of alteration might include body sculpting, be it the swaddling and reshaping of a newborn into a desirable shape; the corsets and tight-lacing popular in the Victorian age;

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298 Compare Laura H. Clarke, Meredith Griffin, "The body natural and the body unnatural: Beauty work and aging," *Journal of Aging Studies* 2007, vol. 21, pp. 187–201.

299 A. Lingis, *Body transformations*, p. 45.

300 I. Persson, "Self-doubt: Why we are not identical to things," pp. 31–32.

301 Despite all the ambiguous connotations of this term.

302 Rebecca Lester, "The (dis)embodied self in anorexia nervosa," *Social Sciences & Medicine* 1997, vol. 44, no. 4, p. 479.

working out in the gymnasium; plastic surgery; or tattooing. In a sense, each of these measures fulfills Claude Lévi Strauss's observation that humans transform the body into a product of its own techniques and representations,"[303] and that this has been done from time immemorial. Enhancing, disabling, or just radically reshaping our own body are the results of an idealistic body image becoming true. Do humans ever have an adequate body image or self-image? Or do they rather constantly create and re-create their body image for their holistic self-knowledge, which is unfinished, involving *natural* bodily and mental aspects as well as *artificial* bodily and mental ones? According to Lingis, "The body is a natural self and, as it were, the subject of perception (...) and experience. But people do not always adequately perceive their own bodies. They do not always feel adequately embodied. In the literature one can find a description of a variety of reasons for ignoring certain internal organs, limbs, elements of looks, etc."[304] The fact that certain organs, qualities, traits, etc. might be overlooked, neglected, or "excluded from the body image,"[305] while other morphemes and organs are inflated and oversized, contributes to a startling argument. It shows that our body image and our natural body shape do not always harmonize with one another. Both can be inaccurate. Sometimes the causes of an inaccurate body image lie in brain lesions and neuropathies, which are responsible for the incorrect processing of visual information by the brain. A properly functioning brain creates a body image based on visual perception, hearing, touch, etc. Visible or palpable changes to those parts of the body, informed by senses, are reflected in the image, or in other words, the representation of one's own body, created by a mind. If the brain regularly captures a relatively similar set of information, the representation of the body is fixed and stored in the corresponding neural correlate. But sometimes it is the body which is inaccurate, and patients follow their body image to reshape their corporeality with the use of radical surgery and technologies. In July 2018, the thirty-two-year-old Adam C., a cancer survivor with albinism, and 90 % of his body surface (including eyeballs) covered in tattoos to cover blemishes stated: "I have a specific vision for myself and I do it step by step." Assisted by his girlfriend, he travelled to Jardines Clinical Hospital in Guadalajara. Removing

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303 Nicolas Vlahogiannis, "Disabling bodies," in: Dominic Montserrat (Ed.), *Changing bodies, changing meanings. Studies on the human body in Antiquity*, New York, Routledge, Taylor & Francis e-Library, 2003, p. 13. The author also describes modifications of the body through deformity, disease, or apotemnophilia, see A. Lingis, *Body transformations*.

304 N. Vlahogiannis, "Disabling bodies," p. 13.

305 S. Gallagher, *How the body shapes the mind*, p. 41.

his nipples and intimate parts was an integral element of his own body vision. Adam's look "is not to everyone's taste,"[306] it is to his taste, and those who are supportive of his efforts to recover himself, the local media related.

Is the human mind unable to create an adequate body representation, following the principle of *adaequatio rei et intellectus*? How does such an image arise, after all? To get an explanation corresponding to the current state of the art, one should distinguish between realistic and cognitive traditions in the imaginative pictorial faculty theory as, respectively, an ability to depict objects, or an ability to apply imagine schemas. According to the cognitive tradition, a figure/image does not mirror reality, and neither does it depict our body. It "is *not a picture* of how the world looks like, but just a schema that can be complemented with more details about its constituents (...) Image schemas are often just geometric or topological structures."[307] We embody them or even consciously apply them in a creative, artistic-like way. A "self-representation without mirroring as a conscious technique of visual embodiment can be traced back to the roots of philosophical and scientific reasoning."[308]

The human mind contains a self-image schema that can be completed with various experiential content. A schema cannot be completed *a priori*, for nobody has ready, innate representations of themselves in their minds. As the schema is completed on the basis of experience, the "I" becomes a controlling agent as, according to Will Johncock, "such an interpretation duly posits a cognitive agent who possesses control over their corporeality, whereby the body becomes a self-construction of a presiding subject."[309] In other words, a body image does

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306 For more details see https://www.albawaba.com/editorchoice/man-tattoos-90–percent-body-remove-genitals-because-they-spoil-art-effect-1161780; http://vt.co/news/weird/man-who-is-90–covered-in-tattoos-has-had-his-manhood-removed-as-it-interferes-with-his-look/ (last accessed on July 20, 2018).

307 Peter Gärdenfors, "Cognitive semantics and image schemas with embodied forces," in: J.-M. Krois, M. Rosengren, A. Steidele, D. Westerkamp (Eds.), *Embodiment and cognition in culture*, Amsterdam, Philadelphia, John Benjamin's Publishing Company, 2007, pp. 63–64.

308 Clausberg Klaus, "Feeling embodied in vision: The imagery of self-perception without mirrors," p. 78.

309 Will Johncock, "Modifying the modifier: Body modification as social incarnation," *Journal of the Theory of Social Behavior* 2012, vol. 42, no. 3, p. 241. For a comparative/integrative approach of self-transparency, self-opacity, self-representation and self-interpretation see Peter Carruthers, *The opacity of mind*, Oxford, Oxford University Press, 2013.

not arise *ex nihilo,* but is shaped on the basis of a cognitive structure filled with data, i.e., experiential content. However, personal perceptions, impressions, experiences, etc. are not the sole source content. Our perception and cognition seem to work in an assemblage comprising three components course, namely as *sensus particulares*, *sensus communis,* and *sensus caecus.* According to Valéry and Lacan, individuals pattern their self-representations upon other individuals and *vice versa*; hence all self-representations become more and more interpersonal and impersonal. "Who, then, is the spectator whose perception of the body 'creates' the body. The delineation of the spectator, of the spectator's body, their differentiation from the observed, the observed's body, is not so clear as we might have imagined."[310]

The abilities of creative perception and perceptual creation, as well as the virtual extensions offered by advanced digital technologies, seem to undermine the classic paradigm of one's *own* body and its *eidos* pioneered by Aquinas[311] and Origen, and later advocated by phenomenology. It also contradicts contemporary developments in biometrics[312] and the simplified approach to narcissism. For true narcissism does not refer to one's own preoriginal "vulnerable, corruptible, and finite biological" embodiment, but rather to a "narcisstic relationship where one does not see the other" or even oneself as such, but "one sees oneself in the gaze of the other."[313] Still, it supports the implications of biometrics for contemporary human endeavors to attain a perfect body, which, again, implies the absorption of the first-person perspectivism by social imagery, cultural ideals, nomological standards, and environmental factors, or at least the interdependency between an individual living being and its habitat. It may imply reductionism, inertia, reification, and biopolitical violence – even annihilation – when the "I" stops contributing actively to its interrelations with the world around. In Merleau-Ponty's terms, it then stops being a prime mover and an interactive

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310 Vincent Grapanzano, *Imaginative horizons. An essay in literary-philosophical anthropology*, Chicago, London, The University of Chicago Press, 2004, p. 79.

311 Aquinas, S*elected philosophical writings*.

312 See e.g. Michèle Koleck, Marylou Brouchon-Schweitzer, Florence Cousson-Gélie, Bruno Quintard, "The Body-Image Questionnaire (BIQ): An extension," *Perceptual and Motor Skills* 2002, vol. 94, pp. 189–196.

313 This interpretation refers to Oscar Wilde's novel titled *The Disciple* and has been examined by Margarita Saénz-Herrero, "Gender and corporeality, corporeality and body image," in: idem (Ed.), *Psychopathology in women. Incorporating gender perspective into descriptive psychopathology*. Springer International Publishing Switzerland, 2015, p. 135.

agent of intercorporeality. In such a case, an individual embodied self is regarded as an epiphenomenon or an effect of external factors.

Perceiving and being perceived in a way that implies a weakening of the "egological"[314] perspective can be examined in the light of epistemological and ontological dualism. According to this long-standing tradition, there are two kinds of corporeality in which a human being can be incarnated. The first one is the terrestrial, temporary, false corporeality regarded as the soul's prison and neglected in neo-Platonic and early Christian traditions. The second one is celestial, eschatological, true corporeality (in other cultures, ritually impure and pure bodies, respectively). It is an almost spiritual and mystic body that corresponds with our true self. For some thinkers, the reunion with our true self (including the body depicted in the corresponding eternal *eidos*[315]) will occur after death. For some others it may occur through the transformation to an ascetical lifestyle, anticipating a posthumous condition, for it allows the real body to be purified of its organic, physiological and sexual features, as well as other mundane ones. This strengthens our "self" so that it can ritually transition to a true, ideal, blessed body as it was (and still is) practiced in religious contexts.[316] However, such a transition between true/false, sacral/profane, weak/strong, material/spiritual, contingent/eternal, "tyrannizing"/"liberating,"[317] etc. bodies usually implied the negation of the "false" in the name of the "true." According to Agamben and de Rougemont, a "false imagination" of a true *self* resulted in self-destructive tendencies, reverse epistemologies and ontologies, and is associated with the disintegration of *conditio humana* in various cultures, including contemporary Western psychology. What was projected on one's own, natural, terrestrial, and temporary body image was its ideal, ultimate, and eternal version, additionally legitimized by the Holy Scripture's narratives, such as the Song of the Songs, and the Road to Damascus, on which Saul converted to his true self, to finally became Paul of Tarsus. One may note here that this kind of projection is different than the image of others and the collective "eyes," in which we narcissistically mirror

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314 See D. Zahavi, *Subjectivity and selfhood*, pp. 99–105.

315 G. Agamben, *Nudities*, p. 93.

316 G. Agamben, *Nudities*, pp. 91–113; comp. E. Nowak, "Ciała w glorii," and Jennifer Wright Knust, *Unprotected texts. The Bible's surprising contradictions about sex and desire*, New York, Harper One, 2011; also Albert Hogeterp, "Eschatological identities in the Damascus Document," in: F. García Martínez, M. Popović (Eds.), *Defining identities: We, you, and the other in the Dead Sea Scrolls*, Leiden, Boston, Brill, 2008, pp. 111–130.

317 D. de Rougemont, *Love in the Western world*, p. 194.

ourselves, as some existentialist phenomenologists and psychoanalysts claim, especially in the concept of the super–ego. There is, however, the third kind of projection invented in the era of technological imagery, named *Technopoiesis*. Denis de Rougeamont and especially Kitaro Nishida were among the first to examine the Western "form (*eidos*)" of the self from the perspective of Eastern culture, where *eidos* means "something that can be called seeing the form of the formless and hearing the sound of the soundless. Our minds are compelled to seek for this. I would like to give a philosophical foundation to this demand,"[318] Nishida declared in 1927. In contrast, being rooted in modern Western culture is strongly related to egological selfhood, which, among other things, manifests itself in making the body a perfect materialization and visualization of our self's ideal, instead of just being embodied in it.

2. Body Representation Meets Technopoiesis (Hans Jonas Revisited)

Before revisiting Technopoiesis and its impact on the body image and bodily identity, let me briefly examine Jonas' concept of body image (*eidos*) combined with idealized content, but no longer having anything in common with the medieval, static *eidos* of Origen, which "remains identical from infancy to old age" and guarantees "the identity of resurrected body."[319] Jonas breaks with these eschatological traditions, identifying an ingenerate ability rooted in the human mind, which is responsible for autopoietic creativity. The term "autopoietic" means here an intelligent, creative power called *genius* with no additional technological support.

Jonas describes an organic, individual, living–and–lived human body, with its vulnerability, contingency (or "the combination of necessity and contingency,")[320] and changeability, including unique potentialities. Selected potentials can be realized by autopoietic freedom or realized and even enhanced by technopoietic freedom, as long as the latter does not diminish, disfigure, or displace other potentials. As an illustrative example, Jonas describes the cybernetic devices that were originally designed to assist human beings in specific activities and relieve them of the burden of excess work. However, autonomous intelligent

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318 K. Nishida, Preface to *From the actor to the seer* (1927), *NKZ*, 4, p. 6, translated from Japanese to English by R. Wilkinson, *Nishida and Western philosophy*, p. 5 (see the chapter addressing "The Evolution of Body Concept," in this volume).

319 G. Agamben, *Nudities*, p. 94.

320 H. Jonas, *Organism and Freedom*, Chapter V, p. 70.

devices – e.g., robots undertaking responsible, socially relevant decisions – deprive man and society of some of the autonomy and responsibility that Jonas considers to be the inalienable moral attributes of a human being. In other words, anthropology and cybernetics are mutually exclusive, and the latter is, according to Jonas, a dead-end in the development of technology: this development is an expression of human autonomy, but it ultimately turns against this autonomy.

Since the loss of autonomy often passes unnoticed by human beings, it is the duty of philosophy and ethics to remind them of the meaning of the human condition in situations where they imperceptibly abandon autopoiesis for technopoiesis, and instead of preserving and extending liberty – begin to lose it. However, this implication is related rather to the anthropological image of humanity than to human self-representation and body image. In terms of the latter phenomena, Jonas created a very interesting concept, which is worth mentioning here.

The self-representation of humans is no longer provided by an extra-mundane Creator; rather, it originates immanently from a human mind. Jonas' conception extends the phenomenology of corporeality invented by Aquinas; the resulting body image anticipates the most recent approaches in the cognitive sciences and new phenomenology. Still, Jonas belongs to the defenders of the body as a manifestation of *zoe, bios*, and *life*. When his position is compared to the theorists of "embodied Technesis,"[321] he sees all experiential, intellectual, symbolic, etc. abilities as genuine human abilities, and not technological, or post- and transhuman ones. Nor is he a follower of Descartes; his post-dualist ontology protects his anthropology from the disrespect of organic/bodily *res extensa* as an aggregation of replaceable, cog-like parts. In this regard, more than in any other, he is a bio-conservative and provides no room for technological impact "between the 'I' and the 'me' (the ego),"[322] including the bodily 'I' and the organic, fleshy 'me.' The latter could easily be alienated, instrumentalized, reified, multiplied, and replaced, etc. Heidegger and Jonas warned humankind of the dangers of a disintegrated self-representation and a split "*Dasein*," while Benjamin, Lacan, Guattari, and others tried to reintegrate the technologically extended human "*Dasein*."

To Jonas, eidetic perception is one of the core abilities defining human cognitive freedom. This kind of freedom evolves in such a way that it results in a huge

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321 Mark B. N. Hansen, *Embodying technesis. Technology beyond writing*, Ann Arbor, The University of Michigan Press, 2000, p. 181.

322 M. B. N. Hansen, *Embodying technesis*, p. 181.

potential of plasticity, which cannot be found in nonhuman living beings. Most probably, such beings rather develop their subconscious body schema but not a body representation, or a multivariate concept of themselves. With human beings, there is a difference between their "actual organism,"[323] (*soma*) which is involved in interrelations with its environment, and the individualized, personal embodiment with its unique biography. We may have a clinical picture of the somatic condition, the physical organization of selected morphemes, the functions of organs, etc., including X-ray, magnetic resonance, and advanced microscopy imaging molecular structures and microprocesses. Advanced medical diagnostics is able to reconstruct "the organism's experiences and achievements in its lifelong dealings with the environment" and "the germ history"[324] so that the individual can achieve a corresponding *eidos* of its own somatic condition.

Homo Pictor is also able to recognize herself as a human being with her individual posture, appearance, and expression. These humans produce an explicit static image (*das Bild ist inaktiv und in Ruhe*)[325] despite the fact that their existence is dynamic (motility, expression, etc.) and the perceptual and conceptual activities of the human mind are permanently working. Strictly speaking, this provides its owner with two kinds of body image: 1) a static and "long term body image" or "the long-standing sense of what my body looks like,"[326] as Gallagher and O'Shaugnessy will assert later, consisting of certain invariants, for which the presence and structure regularly certify other perceptual acts, and 2) a "short term body image"[327] permanently updated by actual perception. For the record, we perceive our body's surface, except for our face: because we can see it only in a mirror reflection. According to Jonas, a perceptual and, at the same time, conceptual body image is 'static,' for it only reflects and preserves one, selected (abstracted) scene of the continual, dynamic staging of our body (*im Bilde ist der Kausalnexus durchgeschnitten*).[328] But what is particularly interesting in Jonas' notion of body representation is that, due to the act of abstraction, the human mind is free to apply and recontextualize that representation in any manner. Hence, *representing* my body (which, in fact, accompanies me interruptedly) and

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323 H. Jonas, *Organism and Freedom,* Chap. V, p. 74.

324 H. Jonas, *Organism and Freedom*, p. 75.

325 H. Jonas, *Organismus und Freiheit*, p. 286.

326 S. Gallagher, *How the body shapes the mind*, p. 35; also Brian O'Shaugnessy, "Proprioception and the body image," in: J. Bermudez, A. Marcel, N. Eilan (Eds.), *The body and the self*, Cambridge, The MIT Press, 1998, pp. 175–203.

327 S. Gallagher, *How the body shapes the mind,* p. 35cf.

328 H. Jonas, *Organismus und Freiheit*, p. 287.

allowing me to recognize my body in its *sameness* (*Rekognition des Selben oder Gleichen*) all the time are not the sole functions of body image, at least not from the point of view of the creative human mind. At this juncture, Jonas maintains there is eidetic freedom of imagination and picturing in our mind (*eidetische Freiheit der Imagination und des Bildens*). *Adaequatio imaginis ad rem,* he argues, is prior to *adaequatio intellectus ad rem.*[329] The mind, which reproduces states of things, potentially produces new ones, he emphasizes (*die innere Gewalt über das Eidos*)[330] – with considerable consequences. It displays this skill in performative and pragmatic contexts such as self-control and command over one's own body, including expression and motor activity; somaesthetics and somatechnics; handling of physical objects, using tools, cooperation, developing complex professional abilities, social habits, and, last but not least, creativity and auto-creativity (*autopoiesis, technopoiesis*) which require turning oneself into a *project*. According to Jonas, the eidetic skill is the very origin of specifically human freedom. Extending this freedom towards embodiment as humans' outer *Dasein*, one may conceive of the latter to be "the crucial site where one's ethos and values can be physically displayed and attractively developed, but it is also where one's skills of perception and performance can be honed to improve one's cognition and capacities for virtue and happiness."[331] Hence, following her own project of herself, a human being becomes, at least partly,[332] a master of her condition in all the possible aspects which can be mastered and re-mastered. It turns out that her condition is not just predetermined or complete but embodies great potentialities to go much further. Therefore, it is not only a need or a lack (*Mangel*) that pushes human beings to invent technologies, as Herder and Gehlen claimed. It is not just a mythic hubris. It is, first and foremost, an inner potential revealed in the human being by its own eidetic ability responding to her needs. This potential manifests itself in eidetic ability too. Jonas describes its ambiguity with the metaphor of Pandora's box, and he exemplifies this with numerous biomedical practices and experiments performed far beyond the scope of therapeutic aims to create a trans/posthuman, or an artificial humanoid Homunculus. A disintegrated, manipulated, phantasmagorical image of the human bodily condition is one of the major causes of this. Meanwhile, the human's integral image (*Integrität des Menschenbildes*) should remain unviolable (*für uns unantastbar*

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329 H. Jonas, *Organismus und Freiheit*, p. 299.

330 H. Jonas, *Organismus und Freiheit*, p. 300.

331 R. Shusterman, *Body consciousness...*, xii.

332 Or except her vulnerable, mortal and passive biological condition, as Beauvoir and Jonas stress.

sein sollte).[333] *Conditio humana*, according to Jonas, constantly cries out for improvement, conservation, healing, suffering relief and care: "If I think about it in less 'anthropomorphic' terms, yes I do feel that my aids take care for me. (...) They (glasses, hearing aid) work in collaboration with my eyes and my ears (...) I think some of the tuff I was saying in the first couple of paragraph is about being 'in denial' – *I don't actually want to acknowledge my dependency and articulating the fact* that they (glasses, hearing aids) do take care of me means I do have to admit that I am dependent upon them, and increasingly so."[334]

But, Jonas warns, "do not try to be a creator of our Being's roots, on the origins of its secret" (*aber versuchen wir nicht, an der Wurzel unseres Daseins, am Ursitz seines Geheimnisses, Schöpfer zu sein*).[335] Despite Jonas' appeals, the opposite occurs, so that the classical image of man is becoming more and more "antiquated" (*klassisches Bild vom Menschen als antiquiert*).[336] The preoriginal, authentic body image was produced by an individual's perception and cognition, and involved issues added by authentic human fellows. In contrast, recent developments in technologies confront us with body representations that are disconnected from reality, perception, and foregoing cognition. They are neither mimetic reflections nor the constructs of individual and social perception. We are increasingly confronted with entirely artificial simulacra as virtual avatars and mavatars developed, updated, and managed by a set of algorithms on the basis of biometric data.[337] "Here is a danger that we will lose the ability

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333 H. Jonas, *Organismus und Freiheit*, p. 388.

334 Such a collaboration between one's own "helpless, vulnerable, reliant" body and technological support reestablishes and increases "one's embodied security" at the price of functional, existential and identity dependence – but did the human bodily condition ever assume as much independence as the spirit? Fiona K. O'Neill, "Bodily knowing as uncannily canny: Clinical and ethical significance," in: J. E. Latimer, M. W. J. Schillmeier (Eds.), *Un/knowing bodies*, Malden MA, Blackwell Publishing Ltd/The Sociological Review, 2009, pp. 224–225.

335 H. Jonas, *Organismus und Freiheit*, p. 389.

336 See Günter Anders, *Die Antiquiertheit des Menschen*, Munich, Beck, 1992.

337 "As such, the term mavatars is specifically used to describe the biometric representation that is used for the particular function of representing the embodied persona, which includes not only the biometric data about the target but also the behavioral and contextual profile that defines the user's identity from the vendor's, marketer's, or system's perspective. As such, mavatars are more than merely biometric data; it is the 'package' that comes with building a biometric profile associated with the user's personal profile of preferences, behaviors, and history." A mavatar, the authors continue, can be "created, managed, and used," B. P. Mennecke, A. Peters, "From avatars to mavatars," p. 391.

to define ourselves, having surrendered the definition of ourselves to the data gathering entities, often unregulated and beyond our control."[338] It is not only a body image, but a holistic profile of an embodied individual character, beyond his or her control, for it is operated by others, or, more exactly, by artificial intelligence.[339] Merleau-Ponty gave us a prewarning: "Thinking 'operationally' has become a sort of an absolute artificialism, such as we see in the ideology of cybernetics, where human creations are derived from a natural information process, itself conceived on the model of human machines,"[340] humanoid creatures, "Soul Machines"[341] provided with highly creative programs not only to replace humankind in its *homo faber* condition but also to mimic it in its unique pictorial ability. The "Soul Machines" project managers clearly invite humans to a transhuman face-to-face relationship with avatars inspired by human physiognomy, expression, gestures, performative potentials, and, last but not least, interpersonal and social attitudes. They claim:

> When we, as human beings interact face-to-face, it's on the basis of both intellectual and emotional engagement (...) It's something we do naturally. What if machines were able to do this with us as well? With their unprecedented level of intelligence and natural expressions, our life-like artificial humans can connect with us in a much more human way. By analyzing reactions and learning in real time they not only recognize emotional expressions but respond appropriately and interactively. Our emotionally intelligent artificial humans are opening the doors to a new era.[342]

Jonas expressed an analogous but far greater fear of such developments in his work *The Imperative of Responsibility – In Search of an Ethics for the Technological Age.* Here he strongly advocates for the "importance or power of subjectivity" cumulating in the pictorial faculty. "Subjectivity exists," he argues in the vein of

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338 J. Langenderfer, A. Miyazaki, "Privacy in the information economy," p. 384.

339 Which also networks a person with virtual others situating her in the middle of hyperreal world.

340 M. Merleau-Ponty, *The primacy of perception*, p. 160.

341 "Humanizing computing to better humanity," retrieved from https://www. soulmachines.com/ (last accessed on June 10, 2018).

342 "Humanizing computing to better humanity." It is worth mentioning that Shudu Gram, the first digital fashion model, already impressed approximately 100,000 Instagram users. Some of them still identify themselves with her, without knowing it is a trick. "With almost 100,000 followers on Instagram, Shudu Gram is the first digital top model," *Unique Fashion Closet,* April 10m 2018, retrieved from https://www. uniquefashioncloset.com.br/pt/the-top-model-of-the-moment-is-an-avatar/?lang=en (on June 09, 2018)

phenomenology, in its "dual, passive-active nature."[343] It is similar for the pictorial skill (and consciousness), which may reproduce or produce images and ideas. The twofold nature of the entirety of cognition corresponds with the "two-way relation" of an individual living being with the world. The input is one way, while the output is another way. In other words, while the 'determined' is a receptive and passive element, the determining is spontaneous and active. As images and ideas, mental phenomena can be determined by experience to further determine one's existence and activity; but they may also originate "from nothing," e.g., from a mind itself which is an epistemological trésor. "Our being as subjects has this double aspect and consists of receptivity and spontaneity,"[344] Jonas claims. Reducing spontaneity would strengthen receptivity, making a human being into an "epiphenomenon." No living being should be reduced to an epiphenomenon, especially the human. All living beings incorporate spontaneity, and in the case of humankind, spontaneity is involved in most advanced cognitive skills.

But what is the link between the double nature of our pictorial–and intelligent– ability and the representation of ourselves? The latter can evolve in line with an (even radical) project of ourselves without depriving us of subjectivity, spontaneity, and creativity. But creating artificial, intelligent devices in our human image and likeness would diminish the potentials of subjectivity dramatically. Currently, artificial intelligence displays an enhanced "human-like" countenance, silhouette, and profile; with calls to interacting with and mimicking it according to its images, ideas, rules, and habits.

In his late interview given to Norbert Lossau and entitled "*Maschinen werden niemals ein Bewußtsein haben können*" (1991), Jonas warns against such developmental trends, radically critiquing advancements in cybernetics and artificial intelligence. When asked how he would feel if he reserved a hotel room over the phone and discovered that his interlocutor was an artificial intelligence, Jonas answered: "I would be surprised at how far technology has progressed, but that would be no reason to worry." However, when asked about his thoughts on "thinking machines," he replied: "someone who treats this seriously, is confusing computation with reflection and consciousness." Jonas was clearly against the CTM (computational theory of mind) in both human and artificial agents. He continually stressed the priority and inalienability of the pictorial ability, including self-reference, e.g., self-image and conceptual self-representation, and of the responsibility for all activities performed by an autonomous human

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343 H. Jonas, *The imperative of responsibility*, p. 219.
344 H. Jonas, *The imperative of responsibility*, p. 219.

being. To Jonas, sharing all these abilities (for example, social symbolic thinking, co-responsibility, etc.) was only possible with fellow human beings. Their functions should not be delegated to perfectly working artificial agents, and the intrinsic dignity of an individual subjectivity should not be treated disrespectfully and burned under social machinery (*die große Bedeutung des einzelnen Individuums zugunsten einer möglichst reibungslos arbeitenden gesellschaftlichen Maschinerie untergraben würde, wäre das schlimm*).[345] Jonas was similarly skeptical in his assessment of the hypothetical impact of artificial life on humanity, subjectivity, and the self-representation of individuals – for we, humans, conduct our lives by following our representations and ideas. To summarize: according to Jonas, only human beings personify the ability to represent themselves in multiple ways as perceptual, proprioceptual, and conceptual. His conception of the corporeal representation of oneself even anticipates several aspects highlighted by de Beauvoir and Shusterman, such as the ego as a subjectivity aware of the representational, experiential, performative, interactive aspects of her cognition, which are also shared, but only with fellow *humans*.

3. Cognitive Sciences: Putting Together a Jigsaw

Body image might be partly perceptual, partly conceptual. Its theoretical conception has evolved over the last decades to become a complex and dynamic phenomenon. According to Gallagher, body image is a set of interrelated "perceptions, attitudes, beliefs, and dispositions pertaining to one's own body. It can be characterized as involving at least three aspects: body percept, body concept, and body affect."[346] This perceptual and conceptual combination is relatively consistent and stable, but not monolithic. Gallagher mentions fragmentation ("partial representations of the body"),[347] segmentation, and selectivity, by means of which a person draws attention to selected morphemes and areas of her body, inspecting and assessing their location, condition, functionality, etc. in an affectively marked way, while unconsciously omitting, consciously ignoring, or masking others. Still, she tries to give a different look or expression to other morphemes, by means of available care, training, reconstructive surgery, etc. Thus, "one's body appears in consciousness with certain parts emphasized

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345 Hans Jonas, "Maschinen werden niemals ein Bewußtsein haben können. Gespräch mit Norbert Lossau," in: idem, *Das Prinzip Verantwortung,* pp. 609–611.

346 S. Gallagher, *How the body shapes the mind*, p. 37.

347 S. Gallagher, *How the body shapes the mind*, p. 38.

or singled out."[348] The specific characteristics of the body image entail that we perceive it "as clearly differentiated from its environment."[349] This means that perception, cognitive, and affective functions distinguish between our own body and alien matter and bodies, such as, for example, a transplant, an implant, or an artificial prosthesis (but also, e.g., objects and environments with which our own body interrelates). For Gallagher, in a conscious body image, there is no place for intercorporeality as understood by Merleau-Ponty, nor transcorporeality as in Shildrick.[350] Intercorporeal, transcorporeal, and ecological interrelations rather have points in common with body schema. Perhaps, for this reason, taming the radical deformation of the body, injuries, teratologies, severe pain, and other foreign phenomena is such a great challenge for our own body representation. Our own and someone else's eyes, as well as the expectations, prejudices, stereotypes, and outdated conventions hidden in the human mind, are an obstacle to the social acceptance of the impairments, losses, and pathology which we perceive and which we actively oppose. Waldenfels defines them as "radical foreignness" that reduces the subject to a passive, experiential *me* (*patient*), which, again, summons an active "I" response.

In phenomenology, however, such responsiveness was not always advocated strongly enough, especially when body image confronted physical disabilities. From Merleau-Ponty's viewpoint, a missing limb or other morpheme impairs self-representation and self-esteem, and narrows down the human *modus vivendi* defined in terms of an experienced and practiced intercorporeal "being there:"

> What is in us which refuses mutilation and disablement is an *I* commited to a certain physical and inter-human world, who continues to tend towards his world despite handicaps and amputations, and who, to this extent, does not recognize them *de jure*.[351]

Seemingly, Merleau-Ponty also distinguishes between a "passive" *me* and an active, subjective "I," or "agent" who is not only able to detect a split between their lasting corporeal self representation and the actual one, but who is also able to act accordingly, and intentionally as well. The "I" may recognize the change or not. Her verdict results from a complex cognitive judgment. In the face of radical corporeal injury or limb loss, the verdict says 'my body is inhuman', since it is made from the human perspective. Even in patients with anomalous self-experience (such as schizophrenia) who perceive their bodies inadequately, a

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348 S. Gallagher, *How the body shapes the mind*, p. 38.
349 S. Gallagher, *How the body shapes the mind*, p. 38.
350 M. Shildrick, "Why should our bodies end at the skin?"
351 M. Merleau-Ponty, *The phenomenology of perception*, p. 71

deeply embarrassing awareness of being "anomalous," or "inhuman"[352] arises. Their deep cognitive "I" *enacts* them, that is, it demands that they act adequately to their hallucinatory self-image, considered as absolutely 'true.' They also strive to repair and humanize their anomalous bodies, which, again, refers to their preoriginal, regular self-representation. "Moreover, all pathological subjective experiences are never purely deformed isolates, but are always embedded in the patient's self-understanding, thus ultimately demanding from a psychiatrist to explore their subjective meaning and existential enaction."[353] Our corporeal self ("*das leibliche Selbst*" in terms of Waldenfels) remains involved in our mental self and *vice versa.* The two realities are deeply interwoven, but, at the same time, she may vividly experience and conceptualize her body, including appearance, in a way that is disconnected from objective perception and biometric reports. In such dramatic situations as schizophrenia and transplantation, the lack of inner "nuclear" self, identity, and existential orientation may evoke "feelings of being anonymous"[354] or "being no one,"[355] also in a phenomenological sense.

4. Disabled vs. Enhanced Body Representations

4.1 A Dysmorphic Body Image, Facial Allograft Transplantation and Personal Identity[356]

The dysmorphia that is associated with loss and reconstruction, and especially with allograft face transplants, would seem to be most fitting for illustrating the problem of dysmorphic body image. The majority of people who have undergone a transplant which covered over 80 % of their face and head area experienced a deep psychosomatic identity crisis.[357] Maria Siemionow believes that by losing his or her face, a person "remains, internally, the same person that he or she was before."[358] However, other transplantologists reject this claim, referring to the testimonies of

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352 See J. Parnas et al., "EASE: Examination of Anomalous Self-Experience," p. 237.

353 J. Parnas et al., "EASE: Examination of Anomalous Self-Experience," p. 238.

354 J. Parnas et al., "EASE: Examination of Anomalous Self-Experience," p. 238.

355 See Thomas Metzinger's work entitled *Being no one: The Self-Model Theory of Subjectivity*, Cambridge, London, Bradford Book, The MIT Press, 2003, in which the author spares the phenomenological self and advocates for conscious vision, sensory experience, perceptual phenomenal representation, etc. as preconditions of the "global availability" of oneself to oneself.

356 Section 4.1 was involved in E. Nowak, "Ustrój cielesny w doświadczeniu podmiotowym. . .," pp. 61–87.

357 J. S. Swindell Blumenthal-Barby, "Facial allograft transplantation," p. 451.

358 J. S. Swindell Blumenthal-Barby, "Facial allograft transplantation," p. 451.

patients who experienced the dissolution of their (body image disaggregates), or who "found themselves in a dramatic existential crisis, compounded by the fear of further problems associated with the transplant of a new face belonging to someone else."[359] Therefore, the loss of the face drives a search for a face in general, instead of emptiness or drastic deformations and damage (including the lower jaw, palate, nose, ears, lips, eyelids, etc.). At the same time, potential transplant recipients are afraid of having a monstrous or grotesque appearance that would marginalize them socially. This reasoning also refers to the key function of the image and human self-image in the anthropological context. In the minds of patients, this context is absolutely the first condition for the reconstruction of their corporeal identity, and there is no question of crossing the border between the appearance of the human and the transhuman. This is due to the very strong relationship between the face and identity which has been nurtured by human beings.

Many see a transplant as offering a unique opportunity for *life-improvement*[360] (a rebirth), the reintegration of psychosomatic identity,[361] and the integration of corporeal self-representation on the basis of the external appearance,[362] which above all covers the face as the central morpheme of the body in its external structure. Not all potential recipients are prepared to expose themselves to the many risks, including loss of life, chronic infections, relapse of the immunosuppressive reaction,[363] additional reconstructive surgery, lifelong medications, unforeseen side effects for the general health condition, etc. The process of qualifying the

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359 Juan P. Barret, Anna V. Tomasello, *Face transplantation. Principles, technique and artistry*, Berlin–Heidelberg–New York–Dordrecht–London, Springer, 2015, p. 23.

360 Harriet Kiwanuka, Ericka Maria Bueno, J. Rodrigo Diaz-Siso, Lisa Soleymani Lehmann, Bohdan Pomahac, "Evolution of ethical debate on face transplantation, plastic and reconstruction surgery," *EBM Special Topic* 2013, p. 1564; also Sharrona Pearl, *About faces: Physiognomy in nineteenth-century Britain*, Cambridge Mass, Harvard University Press, 2010.

361 J. Swindell Blumenthal-Barby, "Facial allograft transplantation…," p. 451.

362 Currently, the recognizability of a person who has undergone face transplantation does not significantly differ from the recognizability of people who have undergone facial surgical reconstruction or plastic surgery, see Maria De Marsico, Michele Nappi, Daniel Riccio, Harry Wechsler, "Robust face recognition after plastic surgery using region-based approaches," *Pattern Recognition* 2015, vol. 48, pp. 1261–1276; also Manuela Cristina Paduraru, Ruxandra Rascanu, "Body scheme and self-esteem of plastic surgery patients," *Procedia – Social and Behavioral Sciences* 2013, vol. 78, pp. 355–359. Merleau-Ponty, in turn, emphasizes the role of consciousness in merging parts of the body into one image, correlated with perception, see M. Merleau-Ponty, *The phenomenology of perception*,

363 See M. Shildrick, "Why should our bodies end at the skin?," pp. 13–29. In turn, Barret and Serracanta report that with pioneering face transplants, there was most resistance

recipient is complicated. The 'declaration of informed consent' requires examination of the immunological age, numerous interviews to diagnose the individual's ability to accept drastic changes, visual simulations,[364] and other elements. In risk negotiations, the ease/difficulty in controlling the potential recipient's previous deformations are taken into account.[365] This allows conclusions to be drawn on how he or she will cope with the transplant. Psychologists are firstly interested in "who the candidate for transplantation was,"[366] and only then in who he or she will become after the transplant. Specialists in the field of immunology, anesthesiology, transplantology, facial and orthognathic surgery and rehabilitation, etc., count on the fact that "pathologies, dysfunctions and other problems will be solved through case-by-case studies, by experts from many disciplines."[367]

The accounts of people who have experienced a transplant of a vital organ constitute a record for the intercorporeal theory, which is *materialized* in the fact that the organ taken from the donor's organism with its own somatic identity is merged with the recipient's organism, which has its own separate identity. This may give rise to a sense of dual somatic identity, as well as a kind of dissociation:

> On the lived-body account of personal identity, the body is a central part of identity. The body is not some object or house for the mind; it is part of the self. Hence, giving away an organ is like giving away a part of the self. In fact, organ recipients often describe the feeling of having someone else inside of them. The subjective experiences of organ

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to the skin, which literally separated from the body, because the recipient's immune system rejected the transplant at the edge of the body and skin, while tissues and organs implanted deeper are treated more gently, Juan P. Barret, Jordi Serracanta, "LeFort I: Osteotomy and secondary procedures in full-face transplant patients," *Journal of Plastic, Reconstructive, and Aesthetic Surgery* 2013, vol. 13, p. 724.

364 Compare H. Kiwanuka et al., "Evolution of ethical debate."

365 H. Kiwanuka et al., "Evolution of ethical debate."

366 H. Kiwanuka et al., "Evolution of ethical debate." The risk element includes the recipient's immune age (*immunosenescence*), see Daniela Weiskopf, Birgit Weinberger, Beatrix Grubeck-Loebenstein, "The aging of the immune system," *European Society for Organ Transplantation* 2009, vol. 22, pp. 1041–1050 (the immunologically advanced age of recipients is not a criterion for discrimination, but rather an argument in risk assessment based on of medical ethics). It is worth noting that there are diverse selection criteria for transplant candidates. Some are strictly biological, others are others psychological (e.g. willingness to take risks, determination), while others are socio-legal (e.g. equal opportunities). In 2010, a face transplant performed on a seropositive person caused controversy; in 2013, a blind person was refused a similar procedure at a Cleveland clinic, while a clinic in Gliwice performed such a procedure a year later.

367 J. P. Barret, J. Serracanta, "LeFort I: Osteotomy and secondary procedures."

recipients relate more closely to the lived-body account of identity than the psycho-
logical account. Organ recipients do not just feel that they have something that once
belonged to someone else, they feel that they have part of someone else inside of them.[368]

The other materialized intercorporeality that accompanies face transplanta-
tion allografts can be considered as a more radical experience. The late Isabelle
Dinoire (2016 †), the first recipient of a face transplant, at the sight of her own
reflection in a mirror, a few weeks after the transplant (2005), confessed: " 'It will
bever be me' (...) 'as for this face ... it's not me' (...) A part of me and my identity
disappeared forever. And I have precious memories of what I was"[369] based on
the body image that was captured in my memory. And yet despite the disso-
nance in the "landscape" of her then-current physiognomy,[370] shaped by skin
and subcutaneous tissue ("skin as barrier"), Dinoire was able to incorporate a
transplanted morpheme into her functional identity, slowly discovering that she
was able to eat strawberries again, close and open her mouth, blink, speak clearly,
and – more often – smile. Over two years after the transplantation, Dinoire again
commented on her appearance, proving that her assessment of her body image
had become affirmative, despite the completely new morphological quality, and,
above all, despite the radical split between her former and recent face image, and
despite the deep split within her corporeal identity. Dinoire stated: "It's someone
else. Well it's not the ..., it's not her [the donor], it's not me, it's another face."[371]
She thereby pointed to another, third quality produced by surgical transplant
technology, which in the context of somatic identity corresponds neither with
the former embodiment of the donor, not the embodiment of the recipient. It
is rather a completely new and poorly recognized intercorporeal phenomenon,
which has so far only been experienced far by a few people – in particular the few
face allograft recipients (I do not consider here the recipients of internal organs
recipients, who do not see these organs, experiencing their peculiar presence
through proprioception.) Furthermore, in the context of medical technologies,
transplantology, reconstructive, and plastic surgery are distinct disciplines.[372]

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368 J. Swindell Blumenthal-Barby, "Facial allograft," p. 450.

369 C. Bluhm, N. Clendenin, *Someone's else face in the mirror*, pp. 93–94.

370 C. Bluhm, N. Clendenin, *Someone's else face in the mirror*, p. 71.

371 C. Bluhm, N. Clendenin, *Someone's else face in the mirror*, p. 94.

372 In the case of aesthetic enhancement, however, the long-term body representation
     is to be deliberately questioned and even falsified: "local plastic surgery procedures
     can adversely affect automatic recognition similar to pose or expression variations
     in uncontrolled settings, and can further induce 'reverse' aging, which makes people
     look younger," M. De Marsico et al., "Robust face recognition," p. 1262. Moreover, in

The experience of allotransplantation revolves around the confrontation of the body with a "foreign body," with a number of organs, tissues, and cells that constituted the transplant and were organically merged with our own body, including the socially visible "landscape" created by the skin and subcutaneous tissue which is the physical exterior. This experience is not only personal; it is above all interpersonal: its material intercorporeality is a generator of social intercorporeality. The former is invariably associated with visibility and one's own perception and that of others, and thus with body representation focused on one's face.[373] Transplantologists also emphasize the importance of body representation for the motivation of a face allograft recipient. Here, body image has a double meaning which goes far beyond the definition of allograft as a set of organs, tissues, and cells transferred from the embodiment of one human individual to the embodiment of another, from one corporal identity to another new one. In itself, it is something like a "dividuum," a shared bodily phenomenon, a paradox lying above all in the context of such a personal and socially privileged morpheme of the human body as the face. As a researcher representing the medical-ethnographic humanities, Taylor-Alexander describes the above-mentioned meanings of the body and face imaginary as follows:

> Imaginaries can be understood in two ways. First, as how 'people imagine their social existence, how they fit together with others, how things go on between them and their fellows, the expectations that are normally met, and the deeper *normative* notions and images that underlie these expectations'. Second, as they are explored in the realm of technoscience, imaginaries can be thought of as future–orientated fields of social practice.[374]

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a large number of people, looking youthful in their own eyes revises their long-term body image in its perceptual layer while, at the same time, they are aware of their "original" appearance and the illusory effects of aesthetic surgery, cosmetology etc. They do not miss their original face, but they cannot wipe it from their memory. Facial surgery and face transplant surgery require precise biometric and visualization procedures in order to assure "an optimal transformation for face representation," an equilibrium between the past and future, e.g. one's expectations and affection towards one's outer appearance. In radical surgery, "the whole appearance, texture and facial features of an individual small be reconstructed and entirely [and suddenly] changed," pp. 1262–1263.

373 And, from a popular-cultural view, musculature and a vigorous, youthful overall appearance.

374 Samuel Taylor-Alexander, "On face transplantation: Ethical slippage and quiet death in experimental biomedicine," *Anthropology Today* 2013, vol. 29, no. 1, p. 14.

Didier Anzieu has formulated a psychoanalytic concept of "skin ego" as "a mental image of which the ego of the child makes use during the early phases of its development to represent itself as an Ego containing psychical contents, on the basis of its experience of the surface of the body"[375] (similarly, Alan Watts described the phenomenon of "skin-encapsulated ego"). Subcutaneous changes within the body can be less disturbing than those occurring on the visible and tangible surface of the skin because it is easier to observe and identify the latter, being somewhat more objectified. Therapists gradually make patients who had sudden, unexpected accidents and surgical procedures get used to the new image, by initially not providing them with mirrors. Some patients discover the new state of things by chance, for example, by seeing a shadow cast by the body in the hospital room. Anzieu's claim seems to be challenged by Shildrick's conception of transcorporeality, which, in turn, questions the limit of the skin. But many invasive procedures and new biotechnology have physically moved and liquidated this limit, putting the "skin Ego" and "shell Ego" into question.[376] Similarly, such dichotomies as that between singularity, proximity, and symbiosis are the subjects of heated discussion.[377]

The familiar Levinasian phenomenology of face-to-face meetings could furnish another argument in this discussion. Levinas warns against searching for a "real" face in the phenomenal features of a human face. In turn, while warning against hasty face loss, and the visual face quasi-prosthetics of the digital world – especially in the latest practice called "Snapchat dysmorphia" – it is worth recalling the maxim that reveals the positive aspect of desindividuation in Buddhism: Do not reflect on good or evil now, but "contemplate your original physiognomy," the one you had before you came into this world.[378]

In the Judeo-Christian tradition, the "original" is considered the physiognomy that emerges at the moment of coming into the world, revealing a new

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375 Didier Anzieu, *The skin ego. A Psychoanalytic approach to the self*, trans. Ch. Turner, New Haven, Yale University Press, 1987, p. 40. In the same work, Anzieu explores, inter alia, the topographical, interactive and interface-like nature of the skin. See also Naomi Segal, *Consensuality. Didier Anzieu, gender and the sense of touch*, Amsterdam, New York, Rodopi, 2009.

376 C. Bluhm, N. Clendenin, *Someone else's face in the mirror*, p. 91.

377 See Walter Truett Anderson, "Augmentation, symbiosis, transcendence: Technology and the future(s) of human identity," *Futures* 2003, vol. 35, pp. 535–546.

378 Alexandra David-Néel, *Le Bouddhisme du Bouddha*, Paris, Pocket, 1960, pp. 200, 304–305.

human individual. When it is lost due to illness, accident, or another random event, a new face becomes essential – for rebirth.

4.2 A Disabled Body Image and Personal Identity

Following Husserl, whose view of a disabled "organic individuality"[379] was similarly pejorative, Merleau-Ponty adopts a conventional socio-cultural and medical model of disability as he refers to the law of self-esteem of persons who perceive themselves, and are perceived, as disabled. For Shildrick, a researcher devoted to the postconventionalization of disabled and "anomalous bodies" and their social imagery, there is "nothing peculiar" about either disability or about having morphological replacements in one's own body, be it prosthetic devices, transplant organs, implants, etc. "The lived experience of disability generates its own specific possibilities that both limit and extend the performativity of the embodied self,"[380] as Shildrick puts it. She is one of the most representative authors of the new paradigm, according to which a disabled person's potentials and identity are limited and, on the other hand, extended. The nondisabled also discover and fulfill potentials, identities, and selves selectively, but they also have a wider range of possibilities at their disposal. The disproportion between a disabled and a nondisabled person's potentialities indicates that "it is in the responsibility of society and technology to let me do those things and let me achieve everything that I am trying to achieve." "It's just part of ethics and justice"[381] that strongly contributes to the normative aspects of body representations, e.g., that make such representations valid or invalid, involved in connections or excluded from them. Hence, disability may be considered in organism-like,[382] architectural,[383] psychosomatic,[384] and anthropological contexts, but at least three new contexts must be added to this list: body representation related, technological, and normative.

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379 E. Husserl, *Zur Phänomenologie der Intersubjektivität*, p. 67.

380 M. Shildrick, "Why should our bodies end at the skin?," p. 13; also "Staying alive: Affect, identity, and anxiety in organ transplantation."

381 Doron Dorfman, "Re-claiming disability: Identity, procedural justice, and the disability determination process," *Law & Social Inquiry* 2017, vol. 41, no. 1, p. 195.

382 Mark J. Edwards et al., "Limb amputations in fixed dystonia: A form of body integrity and identity disorder," *Movement Disorders* 2011, vol. 26, no. 8, pp. 1410–1414.

383 Ruth Butler, Hester Parr, *Mind and body spaces*, London, Routledge, 1999.

384 H. Dunbar, *Synopsis of psychosomatic diagnosis and treatment*.

The social imaginary in Poland concerning physical disabilities and dysfunctions seems to belong to the conventional or pre-postconventional era. In her description of the negative social attitudes towards physical disabilities, Wolska-Zogata[385] mentions the feelings of ostentatious compassion, carefulness, curiosity, discomfort, and fear; behavior such as reducing a disabled person to her limitations, overestimating the ugliness of a disability; and treating the disabled with hostility and stigmatization.[386] "Deviations from normalcy, dysfunctions, defects would evoke specific social reactions,"[387] Wolska-Zogata concludes.

A pilot survey (Disabio 2017, N=49, 69.4 % females, 28.6 % males, aged 24–70) was conducted to ask Polish citizens with an academic/higher education background, *inter alia*, the following questions and statements:

1. Do disabilities have any hidden, symbolic, or higher meaning? 45.7 % of the survey interviewees declared disability to be a purely biologically or accidentally determined phenomenon; for 19.6 %, it is defined by social norms of what a disability means. 19.6 % answered that a disability not only deskills, but may facilitate the development of novel skills. Only 2.2 % interpreted disability in terms of 'fate.'

2. In your opinion, should disabled people be present/visible in a) daycare centers? b) full-time centers? c) everywhere, sharing their lifeworlds with the nondisabled?

    Results: 93.5 % of the survey interviewees preferred to come across persons with disabilities "everywhere," which reveals an increasing tendency to accept (in terms of social visibility vs. social blindness and social invisibility), and to postconventionalize disabilities in Polish society.

3. This question was also asked: Please chose one expression with the most positive connotation. This question was inspired by Doron Dorfman's study addressing disability metaphors,[388] which address positive connotations and, thus, relativize the negative.

Results: Participants mainly preferred Antoine de Saint-Exupéry's "very simple secret, what is essential is invisible to the eye," divulged in his famous novel, *The*

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385 Irena Wolska-Zogata, "Social attitudes towards the disabled – review of research," *Współczesne Pielęgniarstwo i Ochrona Zdrowia* 2012, vol. 1, no. 4, pp. 81–86.

386 I. Wolska-Zogata, "Social attitudes," p. 82.

387 I. Wolska-Zogata, "Social attitudes," p. 82.

388 Doron Dorfman, "The blind justice paradox: Judges with visual impairments and the disability metaphor," *Cambridge Journal of International and Comparative Law* 2016, vol. 5, no. 2, pp. 272–305; also Ewa Nowak, "Antropologia niepełnosprawności. . .,"

Preferences towards positive connotations of metaphorical expressions with the term 'blind'/'blindness' (N=49, Poland 2017)

- Love is blind
- Justice is blind
- Social blindness/invisibility
- Blind with admiration
- What is essential is invisible to the eye
- Blind fortune
- To turn a blind eye to something
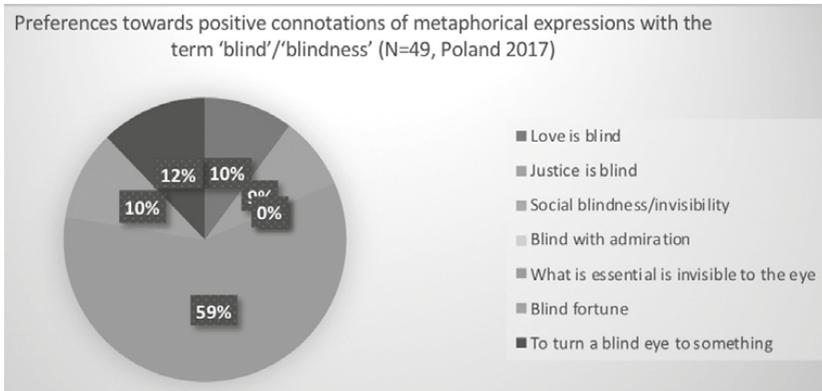
Figure 1. Persons' preferences towards positive connotations of metaphorical expressions with the term 'blind/blindness.'

Little Prince. Expressions such as "social blindness/invisibility" and "blind with admiration" were not indicated (0 % participants). "To turn a blind eye to something" was indicated as positive by 12 % of the participants, notwithstanding its ambiguous connotation.

3. An international pilot study with students was conducted (N=199) in Lithuania, China, Egypt, and Poland (mixed groups, international exchangers and Polish students, social sciences and humanities, aged 19–29). Several cultures were represented. Participation was voluntary and anonymous. No sensitive data were collected. The following question was asked: "In your opinion, is a human body with physical disabilities or disfigurements 1. Anomalous; 2. Polymorph/*different speed*-body; 3. Postconventional (no regulations apply)?" As Figure 2 shows, the results confirmed the hypothesis that a tendency to perceive disfigured or disabled people's bodies as polymorph (or '*different speed*'-bodies) as well as a tendency to postconventionalize those bodies prevailed in students across cultures.

4. Public care should provide disabled persons with a) as much medical technology as possible to enable them to live life to the full; b) the bare minimum of medical technology to enable them to live out their lives in fair conditions.

Results: 91 % of the interviewees preferred *as much medical technology as possible* compared to a bare minimum of support for disabled fellow human beings in Poland.

Students' attitudes towards human body with disabilities
N=199
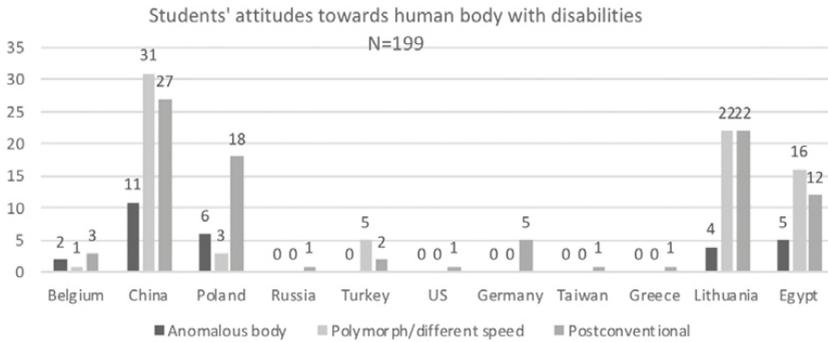
Figure 2. International students' attitudes towards bodies with disabilities and disfigurements.

4.3 Enhanced Bodies, Neuroplasticity and Evolving Representation

Explaining how disfigured, dysfunctional, or otherwise disadvantaged bodies can be represented in their users' minds, including in rare situations "in which the negative physical affliction becomes a positive source of self-knowledge"[389] is probably less difficult than explaining how persons operate and identify with their prosthetic embodiment. Prosthetics does not only reconstruct and replace lost or disfigured limbs and their functions. The literally "mechanized" or "machinic bodies" of Paralympic athletes can function more efficiently, be more robust, and better tolerate stress and wear than completely natural bodies. However, these benefits do not mean that a bionic athlete – or a person fitted with a general bionic prosthesis – treats their body "as a functional machine that occasionally breaks down."[390] Such a reductionist view of one's own embodiment is psychologically unlikely. Even if it has become widespread in the positivist life sciences, contemporary psychosomatic medicine has broken with it. Hence, prosthetic body representation, especially body schema, does not just concern objectifying or reifying one's body. Human beings get to know – or, rather – interpret their body in a less superficial way than they do experiential objects.[391]

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389 J. Stacey, *Teratologies*, p. 1.
390 J. Stacey, *Teratologies*, p. 107.
391 See Nicholas P. Holmes, Charles Spence, "Beyond the body schema: Visual, prosthetic and technological contributions to bodily perception and awareness," in: G. Knoblich, I.M. Thornton, M. Grosjean, M. Shiffrar (Eds.), *Advances in visual cognition. Human*

When artificial organs and limbs become integral parts of a body's inner and outer layer, bodily self-identification is achieved one the one hand through visual and tactile perception and, on the other, through proprioception, interoception, and sensorimotor knowledge. The latter is responsible for the creation of body schema. Thanks to body schema, people are able to coordinate their situatedness, movements and activities in space, and are thereby able to behave as "a unified subject,"[392] which is intelligent and autonomous in its very nature. This autonomy does not mean inertia, opaqueness, or the lack of control over the *terra incognita* of a human body,[393] which was once explored by alchemists and psychoanalysts. Thanks to regular physical therapy and training, patients who have experienced a radical physical loss, e.g., lost limbs, can also modify their body schema and apply it in a way that will facilitate their adaptation to new conditions and ensure that they can perform intended activities successfully. Moreover, "Living beings (...) have just the sort of unity that makes it plausible to think that they might be able, for example, to 'keep track' of patterns of sensorimotor covariation."[394]

The brain's perception, called interoception by neuroscientists (and body sense by phenomenologists), coordinates "the homeostatic regulation of *body-internal* activity in complex living organisms"[395] as sentient (i.e., self-aware) living beings. Yet, how can a cognitive body schema and the inner regulatory system identify and cooperate with artificial implants and bionic limbs?

Proprioception lets me experience my bodily condition from within. Bodily feelings, such as irritation, pain, nudity, pleasure, fever, etc., and physical motility,

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body perception from the inside out: Advances in visual cognition, New York, Oxford University Press, pp. 15–64.

392 T. Ziemke, "The embodied self: Theories. . .," p. 173.

393 See J. Stacey, *Teratologies*, p. 102.

394 Alva Noë, *Action in perception*, MIT Press, Cambridge, 2004, p. 130.

395 T. Ziemke, "The embodied self: Theories," pp. 171–172; see also Francisco J. Varela, *Principles of biological autonomy*, New York, Elsevier, 1979; and "Patterns of life: Intertwining identity and cognition," *Brain and Cognition* 1997, vol. 34, pp. 72–87; and Humberto R. Maturana, Francisco J. Varela, *Autopoiesis and cognition*, Dordecht, Reidel, 1980. The works of neuroscientists, such as A. Damasio's research findings, confirm body representationism: "Body activities shape the pattern, give it a certain intensity and a temporal profile, all of which contribute to why a feeling feels a certain way. But in addition the quality of the feelings probably hinges on the intimate design of the neurons themselves," Antonio Damasio, *Looking for Spinoza: Joy, sorrow and the feeling brain*, Orlando FL, Harcopurt, 2003, p. 129; also AD Craig, "Interoception: The sense of the physiological condition of the body," *Current Opinion in Neurobiology* 2003, vol. 13, pp. 500–505.

are kinds of inner bodily perceptions and experiences. As a result of such experiences, another distinct and durable phenomenon arises and encompasses the entire body, including most of the usual links with its environment. It is the *body schema* which, first, when I wake up in the morning, gives me a sense of blissfully "spilling" my body in bed, but also immediately makes me aware of where the border between my body and bed is, although I will see this border only when I get up and leave the bed. Body schema reveals more complexity than body image and can replace both visual perception and body image. Recent research breaks with the "confusion and ambiguity in the established literature on body image and body schema"[396]. Instead, body schema is defined as

> ... a system of sensory-motor processes that constantly regulate posture and move-ment – processes that function without reflective awareness or the necessity of percep-tual monitoring. Body schemas can also be thought of as collection of sensory-motor interactions that individually define a specific movement or posture (...) body image is conceptually distinct from the body schema.[397]

Body schema is characterized by consistency and durability, and at the same time, by greater plasticity than body image. Repeatedly trained activity may influence the development of novel sub-schema operating the corresponding activity. This applies to both simple activities and extremely complex and pre-cise ones, requiring spatial coordination, the use of tools to shape an object in accordance with our imagination, etc. Learning marble carving, parachuting, climbing, performing operations on the human heart, etc., does not only lead to the mind absorbing textbook knowledge on "how to do it." In fact, it leads to the development of dynamic operational body schemas. These are remembered by the nervous system which reaches around our whole body, and new experiences, such as changing the model of car we drive to work, can further modify this schema. In turn, in practicing climbing stairs or maintaining balance after a long recovery due to physical injury, our body relearns the body schema developed much earlier. Therefore, we do not lose the schema along with the limb and the ability it enabled. It is rather a disfigured or disabled embodiment that enters a state of impotence when it can no longer meet the model schema of activity that its user learned many years ago, and even mastered. Such experiences are helpful in understanding what durability is, and the plasticity of body schema in a person who adapts to functioning in a new embodiment, aided by tech-nology. "Even if pathologies were there, there is a failure in regard to a sense of

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396 S. Gallagher, *How the body shapes the mind*, p. 37.
397 S. Gallagher, *How the body shapes the mind*, pp. 37–38.

ownership, the body schema may continue to function in its anonymous way, that is, in ordinary, non-conscious way of dealing with its environment."[398] Only when the weakness is connected with an illness, especially a chronic and incurable one, is there a discrepancy between the need for everyday functioning and fitness and the sense of loss of control and the sense of helplessness towards one's body:

> The patient is acutely aware of this conflict. The healthy person is so much her body that she usually forgets about it. She passes on to it the duties it has to perform. It is those duties that tell her that she has a body. The steering wheel of her car reveals her hands to her, the pedal her feet, the slippery pavement the fragility of her arms and leg. Paper and pencil show her the dexterity of her right hand and the awkwardness of her left. And if she looks at her body, she recognizes the marks of the duties it performed (...) It is not an instrument but an object, a prey to disease.[399]

The conflict described by van den Berg shows that sensorimotor and kinaesthetic experiences contribute strongly to a person's holistic "functional identity" (as Jonas expresses it) and body schema. Its role is to integrate particular functions, and also to restore[400] and repair them in a way that makes the individual body function "in a more integrated and holistic way. A slight change in posture involves a global adjustment across a large number of muscle systems."[401] In the case of *body image*, which partly consists of floating elements such as perceptions, concepts, ideals, memories, projects, etc., the acceptance of disfigured or disabled morphologies, or of augmented and artificial ones, can be more challenging.

It is highly probable that learning to control the body after undergoing radical surgery, receiving an implant, or fitting a prosthesis, results in these new elements of the embodiment being mastered by them being included in sensorimotor performance and body schema. For example, people using a wheelchair or a prosthesis can, after some time, do it efficiently, although they still treat these devices as something that disturbs the image of their own body. Transplants, implants, exoskeletons, and bionic devices can assist in movement, as tools for functioning in the world, and hence they contribute to body schemas. "Exoskeletons incorporate light-weight, wearable electrically-powered joints which mimic their affected biological counterparts and thus extend the patient's functional body.

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398 S. Gallagher, *How the body shapes the mind*, p. 38.
399 J. H. van den Berg, *The psychology of the sickbed*.
400 As for example synaesthesia.
401 S. Gallagher, *How the body shapes the mind*, p. 38.

Exoskeletons based on innovative medical technology, acquire the wearer's motion intentions."[402] However, such devices are not necessarily (and not immediately) incorporated in the whole body image. In its tacit modus operandi, body schema remains more anonymous and impersonal, unlike body image, which is much more personal even when involving views of inorganic prostheses and artificial devices shaped by technology. Acceptance of such devices is a very personal and individual matter. Certain people, like Les Baugh,[403] integrated ultramodern, intelligent bionic limbs and embodied them in their personality very quickly. After installing a prosthesis, Les Baugh felt *more human and more himself* than before, when for decades, he had lacked shoulders. "These limbs are in my control,"[404] Baugh admits. His words confirm that for him, the priority is the smooth functioning of bionic limbs integrated with his body schema. The functionality of surrogate, extremely efficient hands, which he lost in childhood and which he regained as a man in the prime of life, convey the visual-aesthetic values of prostheses, which contribute to the own body image in persons with dysmorphic or hybrid bodies. Les Baugh is not a bionic celebrity, but a humble man who has acquired mind-controlled bionic arms and can now put the oven on *himself* and fry scrambled eggs for breakfast – which he did before, but with the help of legs. What is more, bionic athletes achieve better results at the Paralympic games than 'analog' athletes who rely solely on the strength of their own muscles, the flexibility of their own tendons, their own ability, since even the fittest physical body is completely exhausted after a few minutes of sprinting. In addition to the Paralympians who draw crowds to the stadiums, the mass aesthetic imagination is overwhelmed by photo models, actors, and dancers such as, for example, Xoe Xapoian and Rebekah Marine. The former prides herself on the fact that "her body is one quarter metal," thus proving that her intelligent bionic leg is an integral part of her own body image. Rebekah Marine was a world-famous pioneer bionic model, equipped with a prosthetic arm. However, a person's reaction to the sight of their own body as a synthetic image, e.g., a face that despite the peculiar disconnection from a person's body, still constitutes an integral part of the same person's body image.[405]

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402 Mariella Pazzaglia, Marco Molinari, "The embodiment of assistive devices – from wheelchair to exoskeleton," *Physics of Life Reviews* 2015, accessed on http://dx.doi.org/10.1016/j.plrev.2015.11.006 (in press).

403 Zackary Canepari, Drea Cooper, Emma Cott, "The bionic man," *Bits/Robotica* video report, Youtube, May 13, 2016.

404 Z. Canepari, D. Cooper, E. Cott, "The bionic man."

405 "It's my face. Only it's peculiarly 'taken off,' " Bertolt Meyer said in 2013, when confronted with the sight of *Bionic man*, whose face was a silicon-made replica of the

4.4 Body Schema Plasticity and The Minded Body (Arnold Gehlen Revisited)

Classic psychological theories treated social interactions as central for mental growth and the evolution of the self. Biotechnological progress confronts individuals with their radically changing embodiment as a novel factor of their identity. Up until now, there have been few examples of fully integral and capable bodies being enhanced and mastered outside of the doping in competitive sport and plastic surgery practiced among celebrities. Intelligent prosthetic technology and neuro-enhancement are generally used to restore or recreate lost parts of the body and their functions. The so-called human cyborgization, which had been celebrated during the two previous decades, at least, is rejected in the current trend, which aims for the maximum likeness between artificial intelligence and that of the human being. If technologies are being used to reverse the natural and random changes that inevitably occur in the human body, whose condition is fragile, vulnerable and mortal, do these technologies have any impact on the evolution of body schema? And does this evolution somehow influence the evolution of self and identity, defined so far in the context of interrelations with the social or natural environment, or with an environment populated by artifacts created by humanity but which are not permanently connected with the human body or brain? The answer to these questions is yes – at least in medical and cognitive phenomenology, there is an agreement that body schema remains in strong cognitive relation with personal identity. "The ineliminable role of the body in the constitution of human subjectivity"[406] and selfhood can only be defined through body schema (and body image). It was Maurice Merleau-Ponty who pioneered research on the *dynamic* – i.e., functional and plastic – of "*le schema corporel*," which is mistranslated to English as "body image."[407] as Gallagher explains. One of his numerous definitions of body schema is as follows: "a *body schema* is a pre-noetic (automatic) system of processes that constantly regulates posture and movement – a system of sensory-motor capacities and actualities that function without the necessity of perceptual monitoring."[408]

Bionic man's designer himself, http://www.fastcompany.com/3005299/how-build-real-1–million-bionic-man (last accessed on June 10, 2016).

406 See Shaun Gallagher, "Dimensions of embodiment: Body image and body schema in medical contexts," in: S. Kay Toombs (Ed.), *Phenomenology and medicine*. Kluwer Academic Publishers, 2001, pp. 147–175.

407 S. Gallagher, "Dimensions of embodiment," pp. 147–175

408 S. Gallagher, "Dimensions of embodiment," p. 149.

Although Gallagher's definition does not thematize any aspects of the ontogenetic or cognitive development of a personal body schema – particularly in the context of technesis – the author mentions that there is a link between explaining sensorimotor functionalities in terms of body schema: the "ontogenetic," "neurological," and personal identity-related explanations, including the "basic phenomenological differentiation between self and non-self, and the senses of agency and ownership."[409]

To consider the body schema plasticity triggered by technologies, one should refer to its earliest shape and the example of aplasia. According to Simmel,[410] the brain could not produce the adequate schema in a person who was born without a hand or who lost it in early childhood, and nor could it develop a neural correlate corresponding to this schema. For Merleau-Ponty, "the reason for the lack of body schema" was rather attributed to neurological-physiological deficits in myelinisation.[411] Meanwhile, experiments conducted in the 1960s demonstrated that persons with aplasia also experience their phantom limb. Today hand transplantation or the fitting of a bionic limb leads to the brain 'recognizing' the hand and learning its function, despite the fact that the brain does not have any memories of the experience with the hand. This shows that the body schema is, to some extent, innate, and its plasticity is not strictly limited to early childhood. The perception and training of one's ability to mimic other's gestures and movements contribute to the development of body schema regardless of age. However, according to Gallagher and Meltzoff, "an innate capacity for proprioceptive experience, an important element of primitive body"[412] is actually the precondition of body schema development. From the neurocognitivist viewpoint, it is never too late to learn a physical activity of any type in order to develop the psychomotoric skills which affect body schema and, subsequently, contribute to the evolution of the embodied self.

Still, equipped with a prosthesis or an intelligent bionic limb (or transplant from a human donor), the recipient may ask doctors to remove the artificial (or

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409 S. Gallagher, "Dimensions of embodiment," pp. 167–168.

410 See Marianne L. Simmel, "Phantoms-experiences following amputation in childhood," *Journal of Neurology, Neurosurgery and Psychiatry* 1962, vol. 25, pp. 69–78.

411 Shaun Gallagher, Andrew N. Meltzoff, "The earliest sense of self and others: Merleau-Ponty and recent developmental studies," *Philosophical Psychology* 1996, vol. 9, no. 2, p. 213; also Brian O'Shaugnessy, "Proprioception and the body image," in: J. Bermudez, A. Marcel, N. Eilan (Eds.), *The body and the self,* Cambridge Mass., The MIT Press, 1995, pp. 175–203.

412 S. Gallagher, A.N. Meltzoff, "The earliest sense of self...," p. 229.

'alien') morpheme, because he or she is unable to identify with it. Let us consider the case of Patrick Kane:

> Shortly after birth, he was stricken by a massive infection that forced the doctors to remove his left arm and part of his right leg below the knee. Kane is one of the youngest persons to be fitted with an i-limb prosthesis (...) The thing Kane likes most is the way it makes him feel. 'Before, the looks I got were an 'Oh, what happened to him? Poor him', sort of thing', he says (...). 'Now, it's 'Ooh? What's that? That's cool!'[413]

Asked about his well-being and expectations concerning a more advanced i-prosthetic which would be integrated with his brain and skeletal system, Patrick shows no real interest. "I like the idea that I can take it off and **be me again.**"[414] Patrick's story demonstrates that human bodily identity does not necessarily need morphological actuality since the brain already has a schema and neural correlates identified as *my body/body that I am*. Presumably, the need for an integral embodiment can vary and depend on many factors, including 1) how well the person functions despite the missing limbs; 2) how intimate the person became with her incomplete or dysmorphic body; 3) how strongly the person was involved in her social environment; 4) how firmly the person attaches importance to her bodily condition, accepting imperfections, redeeming dysfunctions, etc.; and, last but not least, 5) how self-skeptical and non-egological the person might be when modeling herself (which can vary from culture to culture). "Biological organisms exist, but an organism is not a self. Some organisms possess self-models, but such self-models are not selves: they are merely complex brain states. All that really exists are certain typed of information-processing systems that are engaged in operations of self-modelling."[415]

Still, a large number of scholars do not question the human need for personal psychosomatic identity (or at least its representational construct) based on the "experiential dimension," or even an "extended,"[416] ecological concept, which would match technologically generated transcorporeality. The latter involves, for example, bioengineered "ghost organs" replacing damaged or lost limbs. Also, a 3D printed pancreas can be permanently bonded to a body; an artificial implant temporarily installed in the body can be a rail, called an MRS Distractor, which accelerates the elongation of bones, and which is removed after a procedure

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413 Geoff Brumfiel, "The insane and exciting future of the bonic body," *Smithsonian Magazine*, September 2013, p. 76.
414 G. Brumfiel, "The insane and exciting," p. 76.
415 S. Gallagher, D. Zahavi, *The phenomenological mind*, p. 221.
416 S. Gallagher, D. Zahavi, *The phenomenological mind*, pp. 224–225.

lasting several months. Such experiences may provoke existential concern and challenge one's somatic identity at the level of affective-mental representation,[417] however, distorted sensorimotor functionalities can be more challenging for body schema operations[418] than for the body schema integrity. "I normally experience my body as *mine,*"[419] Gallagher emphasizes. In the case of a transplant or an artificial prosthesis, however, my body ceases to be *mine* only. It is not only the split between the living and lived (experienced) body that becomes manifest as I confront it in lethargy and body-mind dissociation states. It is a split between the living and the artificial.

This novel experience seems to materialize – and also revise – a phenomenon that Merleau-Ponty called "intercorporeality." However, Merleau-Ponty considered this to occur between human beings situated in the world, dealing with the world and becoming familiar with it. Thanks to that experience,[420] the current world is also somehow present in them: "the world is wholly inside and I am wholly outside myself."[421] "The belonging to the world" of Merleau-Ponty is related to perception as the very origin of any cognition. Shildrick interprets Merleau-Ponty's intercorporeality as "chiasmatic" and related to embodied intersubjectivity, or to "our everyday engagements with others."[422] To put the things more precisely, Merleau-Ponty's intercorporeality reveals two distinct modalities implied by the two modalities of simple corporeality: a visual one (based on the look from the outside) and an experiential one (based on the look from the inside):

> between my consciousness and my body as I experience it, between this phenomenal body of mine and that of another as I see it from the outside, there exists an internal relation which causes the other to appear as the completion of the system. The other can be evident to me because I am not transparent for myself, and because my subjectivity draws its body in its wake. We were saying earlier: in so far as the other resides in the world, is visible there, and forms a part of my field, he is never an Ego in the sense in which I am one for myself.[423]

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417 M. Ratcliffe, *Feelings of being,* p. 201.

418 S. Gallagher, "Dimensions of embodiment," p. 167.

419 S. Gallagher, *How the body shapes the mind*, p. 35.

420 Merleau-Ponty focuses on the perception: "I am all that I see, I am an intersubjective field, not despite my body and historical situation, but, on the contrary, by being this body and this situation, and through them, all the rest," in: *The phenomenology of perception*, p. 403.

421 M. Merleau-Ponty, *The phenomenology of perception*, pp. 406–407.

422 M. Shildrick, "Why should our bodies end at the skin?," p. 14.

423 M. Merleau-Ponty, *The phenomenology of perception*, p. 315.

Not being transparent to oneself entails that the body becomes a perception screen. In other words, "it is precisely my body which perceives the body of another and discovers in that other body a miraculous prolongation of my own intentions, a familiar way of dealing with the world. Henceforth, as the parts of my body together compromise a system, so my body and another's are one whole, two sides of one and the same phenomenon."[424]

However, a question arises here of whether it is possible for prostheses to be included in this schema of "one" *intercorporeal* "whole"– particularly smart prostheses which are not simply a material extension of our embodiment, but are controlled by the human mind and thus form a brain-computer interface. Recent advances in bionic prosthetics are promising in this respect: it is highly probable that future patients will be endowed with intelligent body parts offering "a miraculous prolongation of my own intentions," hence, becoming rapidly familiar with the embodied I[425] as an agent, and not only a passive "me." Smart robotic prostheses are even able to "predict a user's intentions."[426] Answers to the above question can be provided from three different perspectives. *The first perspective* is based on 'the look from outside' and is explored by Shildrick and others. *The second perspective* is based on 'the look from inside' and is explored in phenomenology and cognitive sciences by, for example, Zahavi and Gallagher. The *third perspective* is experimental, exploring thought experiments with reduced or absent bodies, including full cyborgization. All three views can be related to the intercorporeality proclaimed by Merleau-Ponty, and all three contribute something new to the hypothesis proposing that the body schema can evolve when confronted with artificial body parts.

From Shildrick's viewpoint (which is typical for the *first perspective*), there is a related phenomenon called "transcorporeality" or "crosscorporeality." This designates a continuum between organic, living-and-lived embodiment and an inorganic, artificial, intelligent device. Shildrick reflects on artificial "supplements to the human body that raise the question of intercorporeality to another level.

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424 M. Merleau-Ponty, *The phenomenology of perception*, p. 316.

425 See also Richard A. Andersen, Eun Jung Hwang, Grant H. Mulliken, "Cognitive neural prosthetics," *Annual Review of Psychology* 2010, vol. 61, p. 169.

426 Erik Sofge, "Smart bionic limbs are reengineering the human," *Popular mechanics*, May 28, 2012, retrieved from https://www.popularmechanics.com/science/health/a7764/smart-bionic-limbs-are-reengineering-the-human-9160299/; Natasha Frost, "An artificially intelligent, open-source, bionic leg could change the future of prosthetics," *Quartz* 2019, June 6, retrieved from https://qz.com/1636413/an-open-source-ai-bionic-leg-is-the-future-of-prosthetics/

The use of mechanical aids to enhance bodily appearance or functionality has a long history, but (...) the term itself did not appear in medical use until the early 18th century, when it came to mean the 'replacement of a missing part of the body with an artificial one.' "[427] Additionally, Shildrick explores ways in which the transcorporeal "embodiment exceeds its conventional limits to incorporate what might otherwise be understood as alien matter in either organic or inorganic forms."[428] Consequently, conventional differences between the human and non-human (for example, prosthetic or robotic), and between mine and the other, also disappear. By overcoming these limitations and breaking these distinctions, body ontology and body perception cease to be 'conventional' and become 'postconventional.' Shildrick, Haraway, Braidotti, Grosz, Barad, Watkin, and others have explored the ontological and normative aspects of the identity of persons who confront transcorporeality. They often spoke of "techno-post-humanism," but the term techno-humanism more adequately describes the constitutive role of transcorporeality for the self and identity. Shildrick's key ontological claim is that transcorporeal bodies, i.e., bodies fitted with inorganic implants, artificial devices, and the like, "are not solid bodies" nor "massive flesh." They are "only becoming bodies"[429] and "assemblages" beyond the difference between the organic and inorganic, the natural and synthetic. In Shildrick, the plasticity of techno-bodies is first considered from the ontological perspective. As social body representations are drawn from axiological and normative resources, a change in the socionormative prosthetic body's status only becomes possible if axiologies and normativities have themselves changed. Still, they fluctuate between segregation, discriminating against a disabled body, a celebration of the transcorporeal, etc. Revolutionizing them would require a new social perception of prosthetic bodies with which persons could identify, while continuing to be human, even in the light of modern anthropologies.

At this point, let me recall the relevant assumptions of Arnold Gehlen's anthropology, which prepared the ground for the postconventional turn attributed to authors such as Shildrick. According to Gehlen, "man creates an 'artificial nature', a technique that is by the same token intelligent. He replaces organic matter with inorganic one and achieves in this way, independence from biological and mental

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427 Margrit Shildrick, "Some reflections on the socio-cultural and bioscientific limits of bodily integrity," *Body & Society* 2010, vol. 16, no. 3, p. 12.

428 M. Shildrick, "Some reflections," p. 12.

429 M. Shildrick, "Why should our bodies end at the skin?," p. 18.

life conditions,"[430] including natural disadvantages. In Gehlen's view, human beings are condemned to exist on the border between nature and culture because they no longer occupy a natural niche in nature. This is one of the characteristics of the human being as "*Mängelwesen*," in comparison with other inhabitants of the natural world. Technology is an integral component of culture and together with culture enables human beings to construct their own world, and hence also to unburden and bring relief (*Entlastung*), to transform themselves (*die Wandlung des Menschen durch die Technik*) and overcome their own deficiencies (*Mängel*) by, for example, producing intelligent tools, through the cooperation between the hand and mind. In contrast to Shildrick, Gehlen questioned the boundaries between organic/inorganic, able/disabled, human/transhuman, since he treated 'deficiency' as a distinguishing feature of the human species. Deficiency is not a negative feature; on the contrary, it has enormous potential for growth and plasticity (*Plastizität*). What merits the inclusion of Gehlen's concept here? In describing the body schema, Gehlen emphasizes that it does not simply reflect the unity of the organism. The body is something other than an organism because the functionality of the body differs from the functionality of the organism. The concept of an 'organism' implies the integral unity of interdependent organs and systems, and its pattern is relatively repetitive. Meanwhile, the body consists of morphemes and organs, which can function to a large extent independently of each other; which can replace each other's functions (for example in synaesthesia); which can cooperate with each other under the direction of the mind; and which can also cooperate with various tools and objects constituting an extension of the human body. In terms of ontology and phenomenology, such spatial extension had already been analyzed by Husserl and Merleau-Ponty, using the example of a motor vehicle driver. However, Gehlen described that extension from the perspective of intelligent functionality and an extended embodied mind. In Gehlen's theory, body schema and organism schema are distinct phenomena. Body schema is primarily an individualized topography of the body (*Topographie des eigenen Leibes*) in motion, automated action, and interaction that is stored in the operational memory of the intelligent human body.

According to Gehlen, in the body, certain morphemes can function independently of others, in stark contrast to the situation with the organism. This is important not only in the context of "one's own body topography"[431] but also in

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430 Arnold Gehlen, *Die Seele im technischen Zeitalter. Sozialpsychologische Probleme der Industriellen Gesellschaft*, Hamburg, Rowohlt, 1957, p. 132.

431 A. Gehlen, *Der Mensch. Seine Natur*, pp. 138–139.

the context of learning, adapting to new conditions, and coordinating intentions, plans, ideas, etc. with the activity that the body performs in the real world. Gehlen described the phenomenon of automated "ideomotoric" (*ideomotorisch*) activities in terms of learning and improving performance until professionalism and mastery are achieved. Furthermore, Gehlen considered this process as one in which intermediary intersubjective relations in material tools become an extension of entities. It is a coordinated use of tools by a number of individuals that mediates their multilateral understanding and orchestrates their multilateral cooperation. Gehlen's description can be successfully applied to disabled users of bionic prostheses who learn to coordinate their prosthetic body with their mind, and who do not use the prosthesis as a tool, but rather cooperate intelligently with it, and it works with them, and also with other people who are engaged in a certain social practice. Gehlen's time was before the advent of bionics, but he described the process of developing embodied "ideomotoric" ability with the example of a musician playing in an orchestra. A musician plays her part of the score, listens to the sound of instruments played by other members of the orchestra, and listens to her own sounds, paying attention in the tacit mode, which does not require deliberation, since using techniques is already intelligent. Ideomotoric coordination is possible due to the fact that organs, senses, and abilities, such as the hands, eyesight, hearing, and speech, perform intelligent activities separately and independently, and at the same time, it is possible to synchronize them: for example, the sequence of notes and a few bars read by the eyes of the musician looking at the score are directly translated into the movements of the wrists, hands, and fingers hitting the keys of the piano. Synchronization – including with other musicians in the orchestra, producing other sounds with their instruments – takes place not only thanks to "conscious techniques" (*Denktechniken*)[432] but also thanks to the overall "control panel" (*Führungsfeld*),[433] which ultimately becomes our intelligent sensorimotor (*Intellektualität der Bewegungsstruktur*). Proficiency is preceded and sustained by practice and the reinforcement of skills (*Eigentätigkeit*).[434] Sequences of combined techniques can be extremely complicated, as when an orchestra performs a musical composition such as a concert or opera.

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432 A. Gehlen, *Der Mensch. Seine Natur*, p. 83.

433 "Dieses System ist das *Führungsfeld*, unter dessen Kontrolle alle motorische und intelligente Erfahrung zusammenhängt," A. Gehlen, *Der Mensch. Seine Natur*, p. 140.

434 A. Gehlen, *Der Mensch. Seine Natur*, p. 140.

For persons with physical disabilities, who with the help of prosthetics strive to attain and maintain the upright posture typical for humans, to master walking, to learn to grab objects, etc., these preoriginal and simple movements are more challenging than the mastery attained by a cello player, which is only available to some talented people. In people with disabilities, such everyday activities do not become "learned automatisms" (*gelernte Automatismen*), but they must be supervised for the rest of their lives by sight, are accompanied by an awareness of limitations, and finally may be dependent on the use of prosthetics, such as an exoskeleton. Extended and augmented embodiment functions at least within a local world, which – according to Shildrick – "does not end at the skin," in persons without disabilities it becomes to a large extent automated, and the "control panel" mentioned above is basically the same as that of the "control panel" with neurocerebral body schema described in neurocognitive sciences. People with disabilities find themselves in a different situation; their body schema does not always attain such a high-level automacy. They are less likely to cope with the anthropological crisis, as Gehlen says, which forces intelligent but "*mängelhaft*" (Gehlen) and "vulnerable" (Jonas) humans to develop cognitive techniques and apply them when confronting the challenges of the real world. For these people, their internal "control panel" is often only sufficient for managing themselves.[435]

However, it would be a mistake to think that human beings only expand their body schema in a conscious way and manage it freely from the outset, training activities with the participation of selected organs and techniques. First, the development of basic posture and movements is determined by evolutionary and phylogenetic mechanisms, which are – to a greater or lesser extent – supported by the child's caregivers. Lakoff, Nuñez, Gallagher, and Zahavi all emphasize that phylogenesis, including the specific sequence of developmental stages, determines the direction that the individual development of sensorimotor abilities will continue to take, as well as the degree of complexity that someone's individual body schema will eventually attain.[436]

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435 J. Stacey, *Teratologies*, p. 179.

436 Compare Gallagher and Zahavi: "capabilities to sit or to adopt some other posture are first of all motor; but they arguably extend to the most abstract and rational capacities for cognition (...) in terms of *development*, attaining the upright posture is delayed in humans. The infant is required to learn it in a struggle against gravity. This calls for a basic conscious wakefullnes: if you fall asleep, you fall. Posture and movement are directly related to biological states of sleep and wakefulness. Prior to standing, early crawling behavior influences the development of perception and cognition (...) in terms of *how we are related to things and other people*, with the upright posture we maintain distance and independence – distance from the ground; distance from

Looking for alternative conceptions of body schema, particularly in techno-logical contexts, the majority of contemporary scholars highlight the primacy of the body, which "pre-processes" and "post-processes"[437] all cognitive activities "utilizing whole body structures."[438] Therefore, "cognition is not only embodied, it is situated and, of course, it is situated because it is embodied."[439]

On the other hand, the body retains not only some autonomy but also pri-macy in relation to cognition: "bodily movements are not fully determined at brain level. Rather, they are re-engineered by the design and flexibility of muscles and tendons (...) and the prior history of their activation."[440] The whole sensori-motor development thus creates a kind of corporeal autobiography, consisting of experiences accumulated probably from the late phase of the prenatal period, when human phylogenetic development begins. This goes to show that human beings are embodied in their own body, and their current experiences are partially derived from earlier experiences. However, advanced technologies can radically change this state of affairs. A bionic man[441] whose body and brain are involved in an interface with robotic devices experiences something like a reincarnation. Certain parts of his body are replaced by prostheses or implants. If these work efficiently and precisely, being subject to mind control, their representations will become an integral part of the body schema over time, or they will overlap with existing representations of original but lost limbs, as in the case of phantom limbs. Recently there are prosthetic devices designed for amputee rock climbers.[442]

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things; and some degree of independence from other people (...) Standing frees the hands for reaching, grasping, manipulating, carrying, using tools, and pointing. Both phylogenetically (with respect to evolution) and ontogenetically (with respect to indi-vidual development), these changes introduce complexities into brain structure," *The phenomenological mind*, p. 150.

437 Hillel J. Chiel, Randall D. Beer, "The brain has a body: Adaptive behavior emerges from interactions of nervous system, body and environment," *TINS* 1997, vol. 20, no. 12, p. 553.

438 H. J. Chiel, Randall D. Beer, "The brain has a body," p. 533.

439 S. Gallagher, D. Zahavi, *The phenomenological mind*, p. 150; also C. Caldwell, "Mindfulness and bodyfulness," pp. 77–96.

440 H. J. Chiel, R. D. Beer, "The brain has a body," p. 553; also S. Gallagher, D. Zahavi, *The phenomenological mind*, p. 151; comp. Felix E. Zajac, "Muscle coordination of movement: A perspective," *Journal of Biomechanics* 1993, vol. 26, no. 1, pp. 109–124.

441 See Z. Canepari, D. Cooper, E. Cott, "The bionic man."

442 "Klippa, prosthetic leg for rock climbers," *The James Dyson Award* (last accessed on June 29, 2018 on https://www.jamesdysonaward.org/2014/project/klippa-prosthetic-leg-rock-climbers/).

In attempting to explain how a body schema develops in the other perspective mentioned earlier, based on "the look from inside," it is necessary to deal with the criticism that this perspective is unscientific because it is burdened with strong subjectivism and first-person perspectivism. For example, the thought experiments conducted by Dennett, Zahavi, or Brown, which seek to demonstrate that the human brain (including body schema) may continue its cognitive activities when removed from its embodiment, i.e., put 'in a vat', and can be connected with any kind of embodiment "via radio waves" (in Zahavi's terms), or replicated by digital programs, artificial neural networks, etc., in fact, demonstrate just the opposite: namely that when alone the brain is unable to continue *human* or *human-like* cognitive processes. All those experiments were just run by scholars who attempted to bring the mind-body dualism back to life, as if the phenomenological turn[443] had not taken place in the previous century, thus definitively dismantling this dualism. Those scholars also denied the huge cognitive significance of the body as an integral part of the real world. They reduced the body to a "container" and the mind to "software," to finally replace what is real with a combination of hyperreal and virtual technologies.

Similarly, the belief the brain is isolated from the rest of the nervous system and manages the whole body as a kind of control panel is now recognized as false (yet it still maintains its grip on the popular understanding). At the same time, "the nervous system cannot process information that is not transduced by the periphery"[444] and the peripheral nervous system. In the embodied mind, there are no unknown peripheries and frontiers which are devoid of meaning for cognition, like *terra incognita* that are not taken into account by our body topography and not encompassed by the body schema. Even if there are grey areas on this map, there are reasons to temporarily protect them or exclude

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443 According to Gallagher and Zahavi, Merleau-Ponty was the very voice of the phenomenological turn about body as "the lived body is neither spirit not nature, neither soul nor body, neither inner nor outer, neither subject nor object. All of these contraposed categories are derivations of something more basic;" the lived body seems to incorporate the phenomenological mind itself, and to be itself "a principle of experience, it is what permits us to see, touch, smell, etc.," S. Gallagher, D. Zahavi, *The phenomenological mind*, p. 153.

444 H. J. Chiel, R. D. Beer, "The brain has a body," p. 554.

them from the sensorimotor operational system. The whole neuronal system runs its permanent somatographic activity (which is the equivalent to cartography) most often without the participation of our consciousness, while the body image may omit these grey areas since it is in part projection, confabulation, and even fiction. Furthermore, it is possible that the brain's regenerative capacity – including those which are technologically enhanced[445] – is more limited in comparison to the repair capacity of the nervous system when managing our extremities.

Obtaining an adequate understanding of body image related to "the look from the inside" in the context of technologies which support human embodiment requires that multiple clinical trials be undertaken. To date, there have not been many such trials, because bionics and robotics are relatively new disciplines, and their extremely expensive products are only available for now to a small group of experimental users. However, were there to be a representative number of participants, such studies would have to include feedback based on proprioception, or subjective body sense and "passive touch," as Merleau-Ponty described proprioception. It would be complemented by haptic perception, which explores material objects and the intersections between my body, other bodies, objects, etc. It is this which realizes where the boundaries of my body are, also when the body is equipped with bionic and robotic devices. It is this which, in connection with the representations in the somatosensory cortex, confirms the lack of a specific part of the body, e.g., due to amputation. It is the haptic perception that corrects and updates the body schema, teaching human cognition what changes have taken place in the body by comparing current experience with previous experience. Proprioception and haptic perception strongly contribute to neuroplasticity and to the plasticity of body representations. In a similar way, people are aware of and oriented to the dimensions of their car (e.g., if there is a heavy load or not), its distance, and position relative to the ground, to other road users, immobile obstacles, etc. Martin Grunwald also argues that our sense of our own body is the only sure way that we can convince ourselves of our

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445 The problem with central neural system repair mechnism seems to be rooted in glial cells and other biochemical factors making the neural injuries here even more serious, see Matthias Deliano, "Prothesen für das Gehirn: Blinde sehen, Lahme gehen, Taube hören?," in: Peter Böhlemann, Almuth Hattenbach, Lars Klinnert, Peter Markus (Eds.), *Der machbare Mensch? Moderne Hirnforschung, biomedizinisches Enhancement und christliches Menschenbild*, Berlin, LIT, 2010, p. 67.

own existence: it alone cannot deceive us.[446] while the other senses do not provide us with such unambiguous certainty that the body exists, that it contains a certain inner world, and that outside of it there is a real world that does not belong to the body, but to which somehow the body belongs, variously situated in it.[447] Interestingly, the same sense of touch informs us of the existence of virtual objects and surfaces that we experience through a sense of lack or relief, e.g. when we say 'I feel as I am barefoot in these shoes' or 'I miss your touch.' Not touching anything is also an important element of experiencing one's own body, and it is also embedded in the body schema. For Ratcliffe, bodily feeling gives, on the one hand, a sense that our body is an object and, on the other, a sense of an object that is *something different* from our own body. Ultimately, the sense of touch determines the ontological relationship between what touches and what is touched and informs cognition of this, which constantly updates the schema of our body-in-the-world. On the example of the feeling and sensing body, Ratcliffe[448] clearly captures the dual role of the human body, which is both an object and an instrument of feeling. He also proposed a table for determining gradations in the intensity of the feeling – provided by the sense of touch – that objects are present. Thus, there are objects whose presence, due to their weight, pressure, etc., is felt very strongly, even as invasive. There are also such objects whose presence we do not notice, due to habituation, even though they are directly on the surface of our body (e.g., our favorite clothing), or even are buried in it (e.g., tooth implants or joint endoprostheses). On the other hand, we can be acutely aware of our nakedness when we take off our clothes. It is very likely that habituation can make people become accustomed to the presence of artificial devices that are permanently connected to their bodies, who eventually become so used to them that they cease to notice their presence, and the sense of an alien presence is completely overcome. This does not necessarily mean that the attitude adopted towards these objects automatically becomes affirmative. Without a specific connection to bionics, Ratcliff gave separate consideration to the internal sense of the importance of an object, which is born in tactile contact with its surface, consistency, temperature, etc. Objects may seem pleasant to touch and encourage further exploration, or vice versa, discourage further

446 See Martin Grunwald, *Homo Hapticus. Warum wir ohne Tastsinn nicht leben können*, Munich, Droemer Knaur, 2017.

447 Martin Grunwald (Ed.), *Human haptic perception. Basics and applications*, Basel, Boston, Berlin, Birkhäuser Verlag, 2008.

448 M. Ratcliffe, *Feelings of being*, pp. 86–110.

exploration, but regardless of this, maintain their value in the eyes of the user due to the functions they fulfill. In addition to the designer prostheses which celebrities like to show off, there are ordinary, cheap prostheses without any aesthetic value, increasingly printed in 3D, such as artificial limbs for children injured in Syria or Afghanistan. They are very important because they save lives: they help people quickly reach a hideout when shots are fired.

After the surgical implantation of a hip joint endoprosthesis, my father is willing to use a rollator walker (a wheeled walker that facilitates walking and rehabilitation), but he does not derive any pleasure from its look, shape, or the material from which it is made. However, this is related to the social image of an invalid, which is common in small Polish cities and built into human consciousness, connected to the shame caused by a deviation from the 'norm.' As Shildrick continually stresses, it is essential that social discourse[449] and postconventionalization evolve, when it comes to the perception of prosthetic and robotics technologies. It is simply not the case, as Giddens claimed, that the body has been privatized in the postmodern era. This should imply more authenticity, affirmative experience of one's own corporeality, ontological security and a more inclusive model of intercorporeality as embodied intersubjectivity. But intersubjectivity also includes the look from outside.

4.5 A Look from the Outside

Despite all the social, cultural, and normative troubles associated with the prosthetic human condition, recent research findings clearly demonstrate "the importance of establishing a sense of embodiment of a prosthetic limb in patients," in particular "with limb amputation. For amputees, appropriate redirection of physiological sensations from a prosthetic limb to the phantom limb map drive a perceptual shift towards embodiment of the device, predicting the recovery of arm function. Conversely, the absence of embodiment impedes efficient use of this assistive tool and contributes to its rejection."[450] Severe injuries, but also implantations, transplantations, etc. diminish the transfer of proprioceptive data and reduce their involvement in a patient's body schema and their application to their actual self-movement. Recent research findings also show the "non-self items" to be successfully integrated into the body schema if – and only if – proprioception really functions. That is the precondition of

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449 See D. Mitchell, S. Snyder, *Narrative prosthesis*.
450 M. Pazzaglia, M. Molinari, "The embodiment of assistive devices."

transiting from "an alien and non-recognized element," and a patient's "opposition to the tool," towards somatic incorporation and cognitive inclusion in the sensorimotor map, which is completely based on neuroplasticity. The human-machine interaction, even when it leads "to an enhancement of the bidirectional symbiotic interaction between the patient and wearable robotic legs"[451] remains profoundly human, since it increases "the experience of being the agent of a given action involving the assistive device" and intensifying "a regular feeling of agency" over intelligent artificial devices. Advances in robotic prosthetics respect 'the look from inside' in their addressees much more than any posthumanist arguments, such as redesigning the human beings, making them "master-like" (Michael Sandel) and using them as "a polygon for most diverse manipulations and modifications."[452]

Societies have little experience with advanced prosthetic technologies. To examine people's attitudes towards artificial devices, human, and posthuman identities, a cross-national pilot study was conducted with higher-education students representing different countries and cultures (pilot survey design as described above; N=199). Two questions were asked:

Question 1. Individuals equipped with artificial intelligent devices and enhancements show

a) Superhuman, physical or cognitive potentials beyond the human standard,
b) Different potentials,
c) All human beings have the same potentials.

Results. Participants (young higher-education students of social sciences and humanities) mainly indicated answers b and c ("different potentials" and "same human potentials"). 18.59 % of interviewees considered artificial intelligent technologies to provide individuals with additional 'superhuman' potentials or qualities, much less than expected by the author and invited co-researchers (Shaogang Yang, Roma Kriauciuniene, Roberto Franzini Tibaldeo 2018–2019). For 50.25 %, artificial devices contributed to a variety of individual potentials, and for 31.15 %, all human beings have the same innate potentials.

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451 M. Pazzaglia, M. Molinari, "The embodiment of assistive devices."
452 Boris G. Yudin, "Creation of a transhuman," *Herald of the Russian Academy of Science* 2007, vol. 77, no. 3, p. 249.
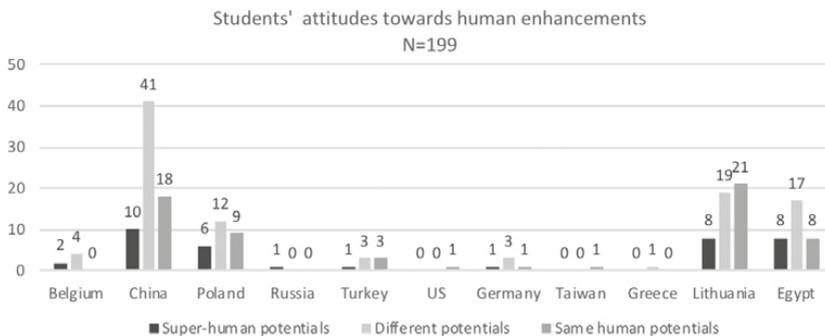
Figure 3. Students' attitudes towards human enhancements across countries.

Question 2. Artificial devices implanted in the human embodiment

a. Are integral parts of a subject's original, human self-identity;
b. Are "alien" and have nothing common with one's self-identity;
c. They create a new, *posthuman* technobody and identity.

Results. Participants mainly indicated answers c and a. As the question was focused on the human embodiment, different preferences were observed culture to culture. 65.2 % of Chinese participants and 37 % of Polish participants would define the crosscorporeal identity[453] as 'posthuman' more likely than other participants. Lithuanian (70 % interviewees) and Egyptian participants (87.8 %) indicated artificial devices and the human bodily identity to make an integral whole. Still, for 20.6 % of participants, artificial devices and technologies belong to the 'alien' area. Chinese students demonstrated the utmost willingness to accept a posthumanism self-identity of individuals with artificial equipments. Chinese and Polish high-school students seem to be familiar with advanced technologies via the internet, as related research studies with Japanese students suggest.[454]

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453 In terms of M. Shildrick, see chapter "The Evolution of Body Concept," in this volume.

454 See Kiyoshu Murata, Mario Arias-Oliva, Jorge Pelegrin-Borondo, "Cross-cultural study about cyborg market acceptance: Japan versus Spain," *European Research on Management and Business Economics* 2019, vol. 25, no. 3, pp. 129–137. Jorge Pelegrín Borondo et al. examined higher education students' ethical motivations 'to become a cyborg.' Egoistic interests were prevailing in 48 % participants (N=1563) across
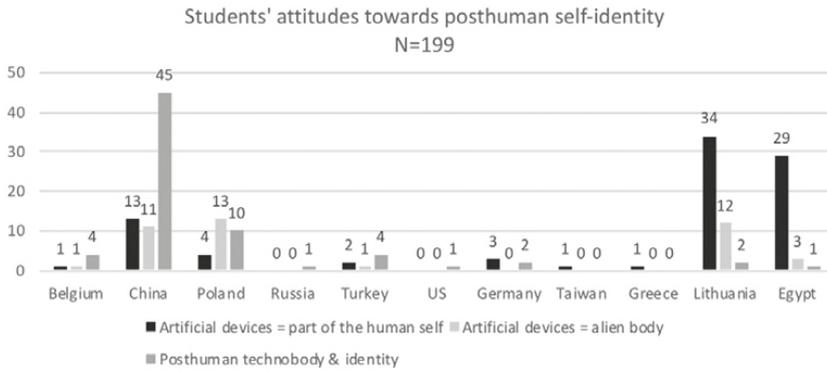
Figure 4. Students' attitudes towards posthuman self-identity on the bases of crosscorporeality.

IV. Psychosurgery. The Self As a Chronic Patient

1. What Is Neuroenhancement

The strong "wounding"[455] of identity may also transpire as a result of neuropsychological interventions intended to modulate or transform selected cognitive skills, emotional properties, motivations, or even virtues. When Ryo Uehara[456] recommends that the radical improvement of human cognition should be limited, he fears concerning identity and authenticity as special personal values and virtues[457] that enhancement is supposed to augment, but also manipulate and change, as A. Huxley's work *Brave New World* shows. This may occur voluntarily or involuntarily.

Bublitz and Merkel endorse protecting the original subjective values as they make up one's identity and authenticity.[458] On the other hand, societies and their institutions permanently produce standards, thresholds, and various 'Rubicons' to cross. However, psychosurgery not only aims at uniformization and normalization but also improves cognitive, emotional, and motivational abilities in subjects, determines and modifies their decisions, behavior ways, lifestyles, personalities, and relations with others. Subjective values do not protect from uniformization and normalization: they need protection themselves. On the other hand, nearly all reach for their harmless everyday self-improvement and self-stimulation such as a morning cup of coffee.

"Most contemporary theories of personal autonomy are at least implicitly based on an idea of authenticity. This implies that neuroenhancements might threaten personal autonomy by undermining authenticity (. . .) [already, E.N.] agents who use potent drugs or direct brain interventions *never* act autonomously."[459] The authors refer to the subjects "who possess minimal autonomous capacities but have so drastically transformed their personality traits through neuroenhancements that their newly formed traits may be regarded as

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455 Kazimierz Dąbrowski, *Co to jest higiena psychiczna*, Warszawa, Nasza Księgarnia, 1962.

456 Ryo Uehara, "Why should we limit radical cognitive enhancement?," *Journal of Philosophy and Ethics in Health Care and Medicine* 2011, vol. 5.

457 Nick Bostrom, "Transhumanist values," *Review of Contemporary Philosophy* 2005, vol. 4, no. 1–2.

458 Jan Christopher Bublitz, Reinhard Merkel, "Autonomy and authenticity of enhanced personality traits," *Bioethics* 2009, vol. 23, no. 6, pp. 360–364.

459 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," pp. 360–361.

inauthentic (. . .) neuroenhancements may modify a person's motives or general disposition to undertake certain actions (. . .) an agent's mood or character traits."[460] Not only direct and indirect brain interventions, but also "pharmaceutics may introduce an alien element into the neuronal system. This hints at another distinction often appealed in the enhancement debate: *natural vs. artificial*."[461] Furthermore, unintended side-effects may be caused through pharmaceutics including behavioral transformations. Certain drugs just "bypass rational capacities"[462] without a preceding decision. They emphasize that "identification is related to satisfaction (. . .) The antipode of identification is alienation.[463]

Neuroenhancements undermine both the autonomy and authenticity of an agent. Though the majority of natural developmental processes occur on the unconscious level, psychosurgical neuroenhancements are illegitimate alien factors to reshape subjects' minds, personalities, and identities. The impact of neuroenhancement extends far beyond healthcare, wellness, mental hygiene, and allover flourishing,[464] reaching levels of self and identity, including moral identity, autonomy, and authenticity. E.g., in the case of Prozac, that stimulates positive emotions, well-being and self-esteem as well as "the feeling of 'really being oneself'" it is the "identification with the new personality" and the entire identification process which are improved. Bublitz and Merkel call this a "self-legitimizing effect."[465]

It is worth emphasizing that in the face of the states of consciousness that neuroenhancement can generate, the self-regulative mechanism of positive disintegration described by Kazimierz Dąbrowski, which mobilizes an agent to constantly choose the "true I" instead of "my strange I," may not in fact work, just like other autotherapeutic and therapeutic methods. For only when "my true self strengthens – it is easier for me to withstand the pressure of my other, strange self. (...) I become stronger then and, on the other hand, more

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460 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," p. 362.

461 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," p. 365.

462 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," p. 366.

463 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," p. 363.

464 Kazimierz Dąbrowski, *Zdrowie psychiczne a wartości ludzkie*, Warszawa, Polskie Towarzystwo Higieny Psychicznej, 1974.

465 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," p. 372; also Heike Schmidt-Felzmann, "Prozac und das wahre Selbst: Authentizität bei psychopharmakologischem Ennancement," In: Bettina Schöne-Seifert, Davinia Talbot, Uwe Opolka, Johann S. Ach (Eds.), *Neuro-Enhancement. Ethik von neuen Herausforderungen*, Paderborn, Mentis, 2009, pp. 143–158.

homogeneous and spiritually strong."[466] When the behaviors of the agent derive from neurochemically stimulated properties, the ideals of autonomy have nothing to do with the real autonomy of their agents[467] (theories of autonomy disagree on agential autonomy). Other authors raise the problem of the social discomfort of people undergoing neurocognitive stimulation: biochemically enhanced virtues can be perceived as inauthentic in the light of universal agreement that the strength of character is characterized by self-control.[468]

As an example, let us consider the implications of the use of BCI (brain-computer interface) and DBS (deep brain stimulation), the aims of which are to enable patients to operate machines, e.g., their wheelchairs or bionic limbs only with brain power[469], to improve their memory with the artificial hippocampus, etc. According to all the predictions, in the near future cybertechnology, combined with nanotechnologies, will create a new generation of devices that will bridge the gap between the real world and the virtual world, and will also be available to healthy people (programmers, engineers, experimenters, etc.) in the form of electrochips, accelerators of cognitive operations, through the BCI technique, and finally "easily and seamlessly move from this real world into virtual spaces."[470] One does not have to wait for the application of such sophisticated technologies to realize that increasing the potential of cognition with these kinds of methods will generate innumerable challenges for the self and identity, and for somatic, ontological and existential awareness. For diagnosing the condition of the new technomind, criteria derived from the EASE test may be useful, especially stream of consciousness, thought interference, discontinuous self-awareness, depersonalization, loss of thought ipseity including distorted first-person perspective, feeling of surrealism, perplexity, split self and "silent thought echo," i.e., "a feeling that one's thoughts become automatically (involuntarily) repeated or somehow doubled."[471] Interference in subjective properties is, therefore, the tip of the iceberg in comparison with the huge array of disturbances mentioned

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466 K. Dąbrowski, *Dezintegracja pozytywna*, p. 44.

467 J. Ch. Bublitz, R. Merkel, "Autonomy and authenticity," p. 362.

468 Laura I. Cabrera, Nicholas S. Fitz, Peter B. Reiner, "Reasons for comfort and discomfort with pharmacological enhancement of cognitive, affective and social domains," *Neuroethics* 2015, vol. 8, p. 100.

469 R. Uehara, "Why should we limit radical cognitive enhancement?," p. 132.

470 R. Uehara, "Why should we limit radical cognitive enhancement?," p. 133.

471 J. Parnas, P. Møller, T. Kircher, J. Thalbitzer, L. Jannson, P. Handest, D. Zahavi, "EASE: Examination of Anomalous Self-Experience," p. 241.

above. Their consequences completely change the experience of the self, and in addition to subjectivity, they modify all the relationships that the self initiates and sustains with others.

2. Examples of Psycho- and Neurotropic Therapies' Effect on the Memory and Identity

We will consider three relatively innocuous examples of psychotropic and neurotropic stimulation, which, however, have "double-edged" results, in the sense that Barbara Chyrowicz employs: the desired improvement in the mental (cognitive, emotional) condition, accompanied by undesirable changes in the subject-identity structure. The first example refers to an enhancement of the ability to remember, which is generally considered to be a key condition for a healthy self and identity and a generally good quality of life. Yet, as Katja Crone writes:

> An extremely developed ability to commit something to memory does not lead to an increase in the ability to act, as has been demonstrated by the Russian psychologist Łuria (...) When attention is drawn to the excessive number of details which have been committed to memory, all with the same intensity and without conscious selection, they obscure the intentions behind the action. A person loses sight of his or her thoughts in the multitude of trivialities and details. Acting in accordance with the individual hierarchy of goals would become difficult or impossible. If memory were technologically intensified to such an extent, it would have a strong impact on the cognitive capabilities and life of such a person.[472]

It transpires that, in addition to the intended effect, excessive memory stimulation triggers a cascade of side effects in the form of short and long-term cognitive disturbances, including: slowing and prolonging decision-making processes; disruption of consistency in action; an involuntary evolution in the priorities of action and the dispersion of their hierarchy; the gradual, involuntary abandonment of certain behaviors and shaping of new patterns; and the imperceptible, progressive erosion of the connection between past experience and present experience as well as between dispositions, incentives, reasons, decision making and the effective actions in terms of mental and non-mental causality.[473]

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472 Katja Crone, "Biotechnologische Gedächtnismanipulation und personales Selbstverständnis," in: D. Hübner (Ed.), *Dimensionen der Person. Genom und Gehirn*, Paderborn, Mentis, 2006, p. 234.

473 Which is a highly complex topic discussed e.g. by Davidson, P. F. Strawson, Parfit, and Ricoeur, *Oneself as another*, p. 76, and Derek Parfit, *Reasons and persons*.

People tend to hold the following illusory convictions: that memory has a cumulative, aggregative and encyclopedic nature, as they identify it with erudition, which is socially-valued; that the level of an individual's cognitive skills grows in direct proportion to their memory capacity; and that the (re-)stimulated memory ability benefits not only memory, but also personality, not to mention the quality of social and professional functioning; and, finally, that increased memory capacity rejuvenates the whole brain since "the brain is taken to be the substitutable equivalent of the person" and it "is the point of application of advanced technology."[474] Meanwhile, the amount of information committed to memory clearly interferes with the processes of processing it.

Therefore, enhancing episodic and short-term memory does not deliver the expected results. Mental operations are slowed down under pressure from an excessive amount of largely indifferent, subjectively overestimated information, eventualities, details, and nuances. Furthermore, from the evolutionary perspective, memory is destined for the *future*. It has to store only what is useful (useful = essential for survival). Memorizing every experience is not useful from this viewpoint. Someone who wants to use e-mail efficiently does not seek to increase the capacity of their inbox – they simply erase useless messages,[475] Judith Horstman argues.

It is understandable that people strive to take care of themselves, particularly when it comes to their getting old ("wisdom . . . comes to the old"[476]), which is characterized by the mind being saturated with such an amount of information and experience that processing and operationalization slow down, which disrupts the hitherto efficient cognitive processes and the behavior and action which depend on them. Such a person is in need of not so much more RAM or MEM as a new processor, which would streamline the processing of information resources stored in the brain.[477]

From the point of view of neuroenhancement, the questions '*What* is absorbed, remembered and forgotten? And *to what extent?*' seem less important than Ricoeur's questions: *Who* remembers or forgets? What significance does the person attach to their memory resources? Does the person identify with an autobiographical narrative? Ricoeur's approach would be closer to the second

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474 P. Ricoeur, *Oneself as another*, p. 150.

475 Judith Horstman, *The scientific American brave new brain*, New York, John Wiley, 2010, p. 40.

476 P. Ricoeur, *Oneself as another*, p. 246.

477 See Reinhard Merkel et al., *Intervening in the brain. Changing psyche and society*, Berlin, Springer, 2007, p. 190.

example, i.e., psychotropic and neurotropical methods of reducing traumatic memories of past experiences to neutral memory traces, known to culture. In his letter to Zelter, Goethe mentions "with every breath we draw, an ethereal stream of Lethe runs through our whole being;" in addition, some of Goethe's heroes cope with the burden of memory while still alive, swallowing the wonderful potion of oblivion.[478]

Modern medicine has at its disposal many ways of weakening or even obliterating selectively defined memories, including the pharmacological modification of long-term memory (traumatic, autobiographical, somatic). The task of such pharmaceuticals is to modify the biochemical synapse environment, or the composition and operation of neurotransmitters, in such a way that it will influence the structure of a well-defined synapse bundle. This is due to the fact that every memory is coded in a certain combination of synapses, and each synapse can participate in many different combinations.[479] The operation of such a proprietary drug consists of

> blocking emotional sensations and preventing the use of experiences stored in long-term memory. Emotions are detached from memories [to neutralize their subjectively felt importance – E.N.]. This would confirm the functional importance of emotions for

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478 Harald Weinrich, *Lethe. Kunst und Kritik des Vergessens*, Munich, C.H. Beck, 1997; Francesca Rigotti, "Schleier und Fluß – Metaphern des Ver//gessens," in: M. Buchholz (Ed.), *Metaphernanalyse,* Göttingen, Vandenhoeck und Ruprecht, 1993; Brian D. Earp, Anders Sandberg, Julian Savulescu, "The medicalization of love," *Cambridge Quarterly of Healthcare Ethics* 2015, vol. 24, no. 3, pp. 323–336, doi: 10.1017/S0963180114000206.

479 Howard Caygill, "Physiological memory systems," in: S. Radstone, B. Schwarz (Eds.), *Memory. Histories, theories, debates*, New York, Fordham University Press, 2010, p. 228. Similar effects can be achieved thanks to therapeutic exercises, but they require great effort. Rose reports that within a few minutes after the end of the exercise there are changes in the release of neurotransmitters at the synapses in specific brain regions, and the chemical signal released by neurotransmitters stimulates the neuron located just behind the synapse for a faster synthesis of cell adhesion proteins, which strengthen synaptic connections. According to Hebb's hypothesis, the brain records, stores and replays memories in a way reminiscent of inscribing the magnetic traces on a CD, see Steven Rose, "Memories are made of this," in: S. Radstone, B. Schwarz (Eds.), *Memory. Histories, theories, debates*, pp. 202–205. Hippocampus may store 36,500 memories. The world learned about the hippocampus thanks to a certain epileptic, HM, whose hippocampus was removed in the 1950s. He lost his autobiography. Being no longer able to transform episodic memories to long term, he was forgetting everything he experienced. "Everyday is by itself," he reported, see Rose, ibidem, p. 200.

the vitality of personal memories, as well as for the ability to assess current events, particularly in the face of danger. The emotions play a key role in the formation of personal assessments and judgments – also retroactively, in relation to the content stored in memory [we can see this with the example of forgiveness, which a person becomes capable of once the heat of emotions decreases – E.N.]. Finally, emotional processes have an impact on later mental processes when it comes to action [for example, anxiety or panic, learned through previous experience, may block certain behaviors or anticipate them in the future visible caution, restraint or intimidation may actually indicate trauma – E.N.]. (...) Obviously, it would be more comfortable not to have to feel anxiety and panic. However, the inhibition of affective reactions at the neurobiological level changes those human behaviors that are based on them (...). The artificial weakening of emotional experiences results in a changed assessment of that which is unconditionally important for a given person and which provides orientation and motivation to his or her actions. (...) The weakening of even single memories changes the structure of the whole personality. Acceptance of such drugs modifies or changes (*modifiziert oder alterniert*) the attitude that the person has so far manifested in his or her behavior.[480]

Describing the effects of these drugs as 'relaxing' does not change their mechanism. One such is Prozac, which has the ability to weaken painful, traumatic, or obsessively recurring memories. In addition, according to the report of the American President's Council, it delays the time required to take action, changes the way of understanding, and finally causes changes in personality and identity, because a patient undergoing medical treatment evaluates the same state before and after taking medicine in a completely different way.

These long-term changes depend on, *inter alia*, the fact that biographical mental plots composed of continuous, linear, or more branched structures, which bind and diachronically coordinate certain of "my" actions and tendencies to act, imperceptibly and involuntarily enter into loose and contingent episodes or threads of unknown origin. These new, neurochemically initiated mental events are with greater or lesser difficulty integrated with "me" as the hero of my biographical narrative, which is a condition for me to recognize them as "mine." The narrative identity[481] no longer prevails these days and has the weaknesses previously discussed in another chapter, but it cannot be completely eliminated from human existence.

The third and last example concerns the effects of gene therapy, which are observable only a few years after surgery. Such therapies involve implanting the neuronal precursor cells into precisely specified regions of the brain. They are taken *ex vivo* from the somatic cells of adults (previously obtained from embryonic stem cells). Neurotransplantation can replace and regenerate lost or

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480 K. Crone, "Biotechnologische Gedächtnismanipulation," pp. 234–235.
481 P. Ricoeur, *Oneself as another*, p. 114.

damaged nerve cells and also compensate for the production of specific, deficient proteins whose task is to nourish nerve cells, stimulate them to the activity or increase the capacity of the synaptic connections (molecular restoration).[482] Within a few months after implantation, cells reach maturity and integrate with neural networks to develop neurotropic or regenerative effects.[483]

When gene therapy is employed to treat the brain, it seems even more technologically advanced. Viruses can be used to 'infect' the cell with new genes (viruses cannot reproduce themselves), and gene transfer can be combined with cell implantation to increase the therapeutic potential.[484] Gene therapies can contribute to the improvement of memory functions without disturbing the memory continuity and "the sphere of ownness."[485] Hypothetically, gene therapies can support individual identity without disrupting autobiographical narrative with additional elements of an unknown origin and, moreover, they should stimulate cognitively, leading to an increase in the efficiency of mental work, learning and solving cognitive tasks – this, in turn, translates into more efficient practice in professional, social and private life.[486]

3. An Episodic Self-identity Turn?

In the book *Oneself as another (Soi-même comme un autre)* (1990) Paul Ricoeur criticized Derek Parfit, who, a few years before (1986), had questioned the diachronic, coherent model of identity assigned to the "I" due to the authenticity of experiences which were lived and significant, and therefore inscribed into memory and autobiographical narrative. Nevertheless, the notorious effort to constantly narrate one's self continuous in the era of self-identity decomposition. Despite Parfit's and his followers's proclamation according to which the narrative no longer matters, subjects manifest their need for autobiographical narratives. How can we know it? They "must continually integrate events which occur in the external world, and sort them into the ongoing 'story' about the self (. . .) There

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482 J. Horstman, *The scientific American brave new brain*.

483 R. Merkel et al., *Intervention in the brain*, pp. 85–105.

484 R. Merkel et al., *Intervention in the brain*, pp. 85–105.

485 P. Ricoeur, *Oneself as another*, p. 54. "Now what an owner has is said to be his or her own in contrast to what belongs to someone else and which, for this reason, is said to be foreign to the former," however, such a distinction would be difficult to apply to the molecular level (p. 94).

486 See Vincent P. Clark, Raja Parasuraman, "Neuroenhancement: Enhancing brain and mind in health and in disease," *NeuroImage* 2014, vol. 85, p. 893.

is surely an unconscious aspect to this chronic 'work,'"[487] much stronger as the power of philosophical proclamations.

Parfit's core ethical reason against the narratively strengthened ego was "the egotism that nourishes the thesis of self-interest."[488] In other words, post-egological is expected to be more openminded, inclusive, generous, empathetic, selfless, etc. in the ethical sense. Without questioning such virtues, Ricoeur's riposte in 1990 was the following: "to the loss of the identity (. . .) thus corresponds the loss of the configuration of the narrative." After Ricoeur's death, in "the conflict between the narrativist version and a nonnarativist version of personal identity"[489] the supporters of the latter seem to have the last laugh. Their advantage over the narrativists may have serious implications, for example, open medical and therapeutic contexts for the 'posthumanist turn' with predomination of the embodied, experiential, phenomenal self-identity. Although humanities (especially medical humanities) advocate for an exhaustive concept of the self and self-identity, technical sciences, especially those contributing to human engineering or human, rarely deal with that concept. A tendency towards dualistic and reductionist thinking in the field, including medicine, is still visible to the naked eye. The correspondency between decomposed selfhood and disfigured narrative also includes the monoaspectual perspective towards the individual.

The idea that individuals do not have to construct their autobiographical narrative (a narrative with self-reference[490]) as their cognition just produces a stream of thought can be also related to Buddhism:

> We (Buddhists) (. . .) maintain (that the Mind is a stream of thought (. . .) Since [a distinct, particular cognition, E.N.] is (also) defined as a moment of consciousness immediately following the preceding moment (in the same stream of thought) (. . .) we would say [they are, E.N.] analytically connected. This relation of Identity is contrasted with the relation of Causality which is a relation between two moments *following* one another.[491]

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487 A. Giddens, *Modernity and self-identity,* p. 54.

488 P. Ricoeur, *Oneself as another*, p. 138.

489 P. Ricoeur, *Oneself as another*, p. 149.

490 David Y. F. Ho, "Selfhood and identity in Confucianism, Taoism, Buddhism and Hinduism: Contrasts with the West," *Journal for the Theory of Social Behavior* 1995, vol. 25, no. 2, p. 122.

491 Theodore Stcherbatsky, *Buddhist logic*, vol. 2, New York, Dover Publications, 1962, pp. 27, 61.

The stream-like cognitive process combined with the stream of life for which an individual ego has to open itself[492] makes a strong argument for a weak, post-narrative concept of the self.

It is worth remembering that Varela had criticized "sequencing" the acts of consciousness as if 'the flame of one candle lit the wick of the next candle,' as Varela once put it. He argued that such a sequence does not match realities in the sphere of mental facts, and that the autopoietic, self-organizing, and synergetic mechanism does not find empirical confirmation.[493] Mental phenomena (both experiential and nonexperiential[494]) can spontaneously and impersonally "happen," without being transferred to the global quality of the self by means of an autobiographical narrative plot. Such a fragmentation obviously conflicts with the basic premise of the narrative conception of the self. In turn, Hagberg's argument voices the self as a deep, private cognitive-affective structure reflected in one's private language, which is hard to translate to the language of self-description and biographical narrative:

> So descriptions, properly understood, are possible, just as is a kind of introspection conducted a self-reflection – but only where 'self' is not misconstructed (...) Predictably, meaning is not stable – as indeed it would be if such words and phrases uniformly *were* reports on, or descriptions corresponding to, inner states constituting inward referents (...) And the investigations we make in biographical contexts, often in 'What-did-you-really-mean-when-you-said...?' form, do not take us into the private inner realm, they take us into what we might well rightly, ordinarily, call the private life of a person (...) For the human understanding, the comprehension of such private – such *sensibly* private – matters, we need to consult outward criteria. And that sense of the understanding of the private is, again, true of the first–person case just as it is of the third–person case; it is the positive form of introspection we need to undertake to gain self-knowledge.[495]

And then ". . . we grasp at the image of speaking (. . .) this imagistic way of thinking of wanting to speak (. . .) is only a simplifying, unifying myth."[496]

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492 As already discussed in this volume (chapter "The concepts of the body").

493 See Francisco J. Varela, Evan T. Thompson, Eleanor Rosch, *Cognitive science and human experience*, Cambridge, MIT Press, 1993, pp. 69–70.

494 Galen Strawson, *Mental reality.* 2nd edition, Cambridge, The MIT Press, 2010, pp. 158–175.

495 Garry L. Hagberg, *Describing ourselves. Wittgenstein and autobiographical consciousness*, Oxford NY, Oxford University Press/Clarendon Press, 2008, pp. 108–109.

496 G. L. Hagberg, *Describing ourselves*, p. 127 (Hagberg profoundly discussing Wittgenstein's private language problem).

In the 2000s, Galen Strawson revised narrativism in several core aspects, including the problem of disconnectedness. In his essay *Against narrativity* Strawson had formulated two complementary working theses, the descriptive: 1. the *psychological Narrativity thesis* thought "as a straightforwardly empirical, descriptive thesis about the way ordinary human beings actually experience their lives," and the normative: 2. the *ethical Narrativity thesis* which states "that experiencing or conceiving one's life as a narrative is (. . .) essential to a well-lived life, to true or full personhood."[497] The first thesis resembles the naturalist narrative theory of Dennett. After having examined all combinations of the two theses also for their psychotherapeutic purpose, Strawson discovered that not only deeply Narrative subject, but also deeply non-Narrative subjects are able to conduct good lives. Every person, regardless of their cultural background, experience, etc., can identify with the type of self that is most suitable for them, without worrying about the causal inference between the elementary 'particles' of their mental and moral life nor must they ask psychotherapists for helping them to improve their selves and identities by means of the narrative methods. The Diachronic self-experience assumes that "one naturally figures oneself, considered as a self, as something that was there in the (further) past and will be there in the (further) future," whereas the Episodic self-experience assumes the opposite: "one does not figure oneself, considered as a self, as something that was there in the (further) past and will be there in the (further) future"[498]. As a result, Strawson proved 'both the psychological Narrativity thesis and the normative Narrativity thesis' to be invalid.[499]

Therefore, we seemingly live in a post-egological and post-narrative world, that is, in a world without the universal imperative to narrate one's self as a coherent diachronic structure. Even though Strawson estimated the episodic disposition to be less distributed in the human population than the diachronic disposition, episodic disposition seems to perfectly match – or even support – all kinds of extended, post-egological, and posthuman lifestyles and identities. "So too predominantly Diachronic individuals" may more and more frequently face

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497 Galen Strawson, "Against narrativity," in: *The self?*, Malden, Blackwell Publishing, 2005, p. 63; also "The self," in: S. Gallagher, J. Shear (Eds.), *Models of the self*, Thorverton, Imprint Academic, 1997, pp. 1–24; for further serious objections addressing the self see Ingmar Persson, "Self-doubt: Why we are not identical to things of any kind," in: G. Strawson (Ed.), *The self?*.

498 G. Strawson, "Against narrativity," p. 65.

499 See Kathy Wilkes' counterarguments in "Gnothe Seauton (know thyself)," *Journal of Consciousness Studies* 1998, vol. 5, pp. 153–165.

episodes of episodic identity, i.e., "an Episodic lack of linkage with well remembered parts of their past" (a lack of causal connection between two or more of their conscious experiences, or between their previous and actual, manifest behavior ways), and show a weakened (if any) sense of consequence and self-commitment which provide one's self, in particular the moral self, with consistency, organization, and some teleology as for example 'what I will make of my life?', 'how can I examine my past life?', and how can I distinguish the growth and development from the regression (to revisit the timeless, ethical questions asked by Socrates, Kant, Campbell, and many others – across disciplines) as a subject with predominantly episodic identity. My objection emerges not from the philosophical controversy between Heideggerians and Baumanians (as Heidegger is known for his strong "*Dasein*" model[500] and Bauman for his concept of 'liquid,' 'instant,' 'contingent' postmodern identity whose origins are to find in breaking with the so-called great narratives and meta-narratives of the modern age, developed to normalize and totalize the particular individual). Nor emerges it from the apprehension about becoming 'no one.'[501] It originates from the need to restore the lost balance between the care for the Other and the care for the Self beyond the two extremities, i.e., the egocentric and the allocentric. Strawson's advice is to individually create unique patterns and constructions that would make one's projects less chaotic and more structured. "this can also be done by form- finding without story-telling,"[502] he finally assumes.

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500   And also known for his "opportunistic silence" after the World War II. A. Assmann, "Formen des Schweigens," pp. 51–58.

501   "currently, you *are* someone. What makes consciously experienced selfhood special, and different from all the other forms of experiential content, is the fact that – in nonpathological standard situations and in beings like ourselves – it is highly invariant. It is *always* there (. . .) There is no unchanging essence, but a complex self-representational process," Thomas Metzinger, *Being no one. The self-model theory of the subjectivity*, Cambridge, London, The MIT Press, 2003, pp. 625–626.

502   G. Strawson, "Against narrativity," p. 77. For his episodic Ethics concept see Galen Strawson, "Episodic ethics," pp. 86–92. "Our life experience teaches us, that changing oneself continually, one remains identical with oneself (...) This is what I call *diachronic identity,*" Günter Rager, "Neurowissenschaftliche Befunde und diachrone Identität," in: E. Hildt, E.-M. Engels (Hg.), *Der implantierte Mensch. Therapie und Enhancement im Gehirn*, Freiburg i.B., Munich, Verlag Carl Alber, 2009, p. 169.

4. Becoming Chronic Patients (and Needing Chronic Therapists vs. Comprehensive Human Enhancement)

Persson's and Savulescu's manifesto switched the alarm signal. It sets out how to make people morally fit for the future of our planet, that is, how to cure them of aggression, how to enable them to solve global climatic and environmental problem, how to empower them to protect democracy against authoritarianism and to introduce equality, altruism, and justice everywhere by means of the moral enhancement. Since to many scholars dispositions for empathy, altruistic behavior, and the sense of justice have biological bases, and since "education or instruction about what is morally good is not sufficient for moral enhancement because to be morally good involves not just knowing what is good, but also being (. . .) strongly motivated to do it,"[503] morality can be biomedically improved, Persson and Savulescu assume. They are even "imagining ant interplay between biomedical and social/political techniques"[504] to facilitate a large-scale improvement.

In fact, subjects are not always able to manage themselves, manage their lives, and mobilize their own strengths and auto-therapeutic emergencies[505] to counteract the invasive "contradiction"[506] (but also confusion, helplessness, loss) making one unfit for now (and the future). In the age of expanding technopoiesis, which is about to control their freedom, even though human beings still seem to be the source of autonomy and free invention, one can certainly talk about a chronic, permanent condition of the agent as a 'patient', thus, a deskilled, nor longer autonomous and authentic subject, a subject inflicted from "virtual

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503 Ingmar Persson, Julian Savulescu, *Unfit for the future. The need for moral enhancement*, Oxford, Oxford University Press 2012, pp. 117.

504 I. Persson, J. Savulescu, *Unfit for the future*, p. 124.

505 Hans-Georg Gadamer, *Schmerz. Einschätzungen aus medizinischer, philosophischer und therapeutischer Sicht*, Heidelberg, Universitätsverlag Winter, 2003, pp. 22–36. In the same interview, Gadamer describes how he imagines the best doctor: "first of all I would expect him to be able to strengthen his own body, no matter what kind of suffering fell on me" (p. 37). He also cites Michel Montaigne's remarkable words, who – as a chronically suffering man – was supposed to have said: " 'If you do not conquer with pain, it will conquer you'. As you can see, he did not say: If your doctor does not conquer pain, then pain twill conquer you. He said clearly 'you', directing these words to the reader" (pp. 36–37).

506 Robert Kegan about "The natural emergencies of the self," *The evolving self. Problem and process in human development,* Cambridge, Mass., Harvard University Press, 1982, p. 258.

dementia" or another "cyber sickness,"[507] depending on what factors make them to 'postpersons,' 'posthumans,' or post-selves in the era of the ubiquitous and influence of artificial factors.[508] In these circumstances

> A doctor who looks after a chronically ill patient becomes a chronic doctor (*chronisch Arzt*), which is experienced by every doctor who has looked after a chronically ill patient for 10 or 15 years in a row, until his death. It is only then that the doctor discovers and becomes aware that this chronically ill patient has become an integral part of his own identity.[509]

However, in this volume, a very different, namely phenomenological model of doctor and patient relationship will be recommended, and both terms, i.e., *doctor* and *patient*, will be redefined to better correspond with the need re-empower the agential potentials of a human being in the era of posthumanism. The most controversial component of the posthumanism would be technological determinism, also increasingly present in clinical and therapeutic contexts. If the imperative of the narrative self-identity is questionable and no longer working for "episodics" (which seem to make an expanding group in the human population), new tools to improve the potentials of our self-identities[510] are to be elaborated. Their role would not be curing manifest symptoms of a radical otherness experience that happened to the patient and disintegrated their self-identity

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507   Manfred Spitzer, *Cyberkrank! Wie das digitalisierte Leben unsere Gesundheit ruiniert*, Munich, Droemer Knaur, 2015. As usual in the ambiguous context of technesis, one should not underestimate the therapeutic effect of digital technologies on health and identity, see Diane B. Francis, Maria Leonora Comello, Laura Heisner Marshall, "How dies gameplaying support values and psychological well-being among cancer survivors?," *Games for Health* 2016, vol. 5, no. 2, pp. 128–134, doi: 10.1089/g4h.2015.0044; see also M. Deliano, "Prothesen für das Gehirn: Blinde sehen, Lahme gehen, Taube hören?," pp. 67–74. Nor should we overlook the "co-shaping" role of media located between humans or between a human and the world, explored in postphenomenological studies, see e.g. Bernard Stiegler, "Automatic society 1: The future of the work," *La Deleuziana. Online Journal of Philosophy* 2015, vol. 1, pp. 121–140.

508   Compare Fritz Hartmann, "Betreuung statt Behandlung chronisch Kranker," *Medizinische Klinik* 1986, vol. 5, pp. 187–191.

509   F. Hartmann, "Betreuung statt Behandlung chronisch Kranker," p. 188. "in the ideal case, the doctor helps in so far as he moves the patient from a chronic condition to a condition that can be conditionally defined as health."

510   Bernhard Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, Frankfurt am Main, Suhrkamp, 2006, pp. 60–61.

but empowering *them* to deal with their experience by the power of their own, immanent, agential potentials. That therapeutic method would be based on the auto-therapeutic potentials of the self, including self-observation, mindfullness, and responsiveness: "I use the term *patient* in the literal sense to first emphasize the passive status of the subject. Now he assumes the status of respondent (*eines Respondenten*), actively responding to what he encountered, what happened to him,"[511] and doing so with the initial support of his therapist. "I would call (. . .) a foreigness which cannot be assigned to any whole (...) Radical strangeness assumes that the subject is not a master of itself (...) that the self is not at home, but is estranged from itself (*ausser sich ist*)."[512]

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511 B. Waldenfels, *Grundmotive einer Phänomenologie*, p. 73.
512 B. Waldenfels, *Grundmotive einer Phänomenologie*, p. 116.

V. Empowering the *Agent*, Not the *Patient*. Gadamer, Kępiński, Dąbrowski and Waldenfels vs. Technopoiesis

1. (Auto)therapeuin

Therapeuin (*ars medicinalis* in Latin) is a peculiar technê, which does not create human health ex nihilo. Therefore, the therapist is not the absolute creator or miracle-worker. Rather, she is a skilled demiurgos who restores the *cosmos*: who harmonizes the elements, powers, functions, etc. previously thrown into disorder (*chaos* in Greek). As a result, therapeuin would not imply a radical technopoiesis, i.e., fabricating something very artificial as typical for advanced technologies that try to exceed the border between the human and posthuman, to reinvent or to negate the identity and the self in humans. The message intended by Plato with his idea of self-mastery was affirmative. Following the imperative *gnṓthiseauthón* even provides an efficient tool of resistance (and resilience) against manipulative technologies. In particular, following this imperative might empower an *agent* in persons who have gone into the condition of patient in the medical sense of the term. Getting addicted to technologies that strip us of self-reference and self-governance (for example, by means of narratives that have an effect on our activity) can be placed in the same, semantic field as the notion 'patient'. This chapter aims to display four examples of our inward *agent* and her autotherapeutic potentials. They have been derived from contemporary hermeneutic philosophy and psychiatry. They teach us how to re-empower the agential competences of the overtechnicized selfhood on the edge of the posthumanism.[513] This re-empowerment would not be possible without the hermeneutic tools such as narratives,[514] dialogue, understanding, explaining,[515] and

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513 See Braden R. Allensby, Daniel Sarewitz, *The techno-human condition*, Cambridge, Mass., London, England, The MIT Press, 2013.

514 According to Charles Taylor, "like any other human being at any time," the modern man "can only find an identity in self-narration," *Sources of the self. The making of the modern identity*, Cambridge, Harvard University Press, 1989, pp. 288–289.

515 Nowadays, the "gnṓthiseauthón" becomes much more demanding because of the complexity of medical knowledge and this is why an individual needto be supported by professional medical expertise, explication, counseling, etc. which, however, cannot be equated with making therapeutic decisions solely by professional authorities.

enabling a patient to take at least a partner's role – or even the central role – within their relationship with therapists and further medical professionals. To put it another way, empowering therapy is one that mobilizes an intrinsic agent in a person who defines herself as passive, e.g., *homo patiens.* Making oneself stronger than one is feeling oneself *here* and *now* embodies the true meaning of "*kreittoautou*"[516] and *gnothiseauton,* which always already called for caring for oneself and curing oneself. It was not simply knowing the truth about oneself, understanding oneself across the constant changes one undergoes, and aspiring to be a better moral self, but – essentially – caring for self-integrity by the activities undertaken by an individual.[517] Developing these agential qualities would be a self's most appropriate answer to excessive techno- and autopoiesis: a healing answer, for "selfhood (*ipséité, ipse*) articulates a relationship one has to oneself,"[518] or a relationship one restored after having lost it once.

Ulrich Oevermann insists that despite the fact that the art of healing uses technê and is widely regarded as an effective alliance between science and technology, it is not *engineering*.[519] Therapeutic intervention is not just the application of means to achieve specific objectives. For example, unlike engineers, doctors cannot simply decide that if they cannot find a solution to a patient's health problem, they will cease their involvement. According to Oevermann, the doctor is guided not only by scientific knowledge *(Wissen)* and technical competence but also by conscience *(Gewissen)*. Conscientious professionalism, in turn,

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516 Ch. Taylor, *Sources of the self*, p. 115.

517 See Michel Foucault, *Hermeneutik des Subjekts*, trans. U. Bokelmann, Frankfurt am Main, Suhrkamp, 2004, pp. 16–17.

518 Andrzej Wierciński, "Hermeneutic notion of a human being as an acting and suffering person," *Ethics in Progress* 2013, vol. 4, no. 2, p. 22.

519 See Ulrich Oevermann, *Klinische Soziologie auf der Basis der Methodologie der objektiven Hermeneutik*, Frankfurt am Main, Institut für Hermeneutische Sozial- und Kulturforschung, 2002; "Die objektive Hermeneutik als unverzichtbare methodologische Grundlage für die Analyse von Subjektivität. Zugleich eine Kritik der Tiefenhermeneutik," in: Thomas Jung, Stefan Müller-Doohm (Eds.), *Wirklichkeit im Deutungsprozess. Verstehen und Methoden in den Kultur- und Sozialwissenschaften*, Frankfurt am Main, Suhrkamp, 1993, pp. 103–189; *Klinische Soziologie. Konzeptionalisierung, Begründung, Berufspraxis und Ausbildung*, Frankfurt am Main, Suhrkamp, 1990. In the essay "Hermeneutik und Psychiatrie" (1989), Hans-Georg Gadamer stresses that medical art (ärztliche/medizinische Kunst) should not be equated with the pursuit of scientific research or the use of scientific discoveries through techniques, practices, and procedures. *Über die Verborgenheit der Gesundheit. Aufsätze und Vorträge*, Frankfurt am Main, Suhrkamp, 1993.

is demonstrated by humanistic and social competences. Although "the goal of medical art is to cure (...) it does not lie only in the power of man, but also in the power of nature (...). Therefore (...) our entire civilization, with its foundation, science and its technical capabilities, always leads us astray, with the belief that we can do everything."[520] However, *nature* here does not mean the laws of physics and the cosmos, nor natural law in the biblical sense. Rather, it is a zoological and biological phenomenon of life which, as Gadamer says, has been awakened in human beings and prompts them to think and ask beyond (i.e., transcend) all kinds of limitations. Gadamer thereby questioned the belief in the omnipotence of medicine (and of science and technique in general), showing that even ancient doctors were aware that a therapist who had managed to cure someone was not a miracle maker, did not produce something from nothing, and that the state of health depended on many different factors. Thus, salvation is not a reconstruction of a being called health ("treating someone, making someone healthy"), but a *restitutio ad integrum*, that is restoring the patient to their previous place in everyday practice and in everyday relations with others, returning them to some "we" *(Wir)*. This can also be understood to mean that the therapist restores the patient's own subjective competence, which, as I will show in this chapter, can be active and instrumental, yet also passive, helpless and suffering (the term *patient/homo patiens* means passive suffering). Only this restoration opens the way to full regeneration, but it often exceeds the possibilities and competences of the therapist;[521] even more frequently, the therapist stops accompanying the patient on this path, and the patient often deviates from it.

No less important in this regard are the therapeutic potentials located in the patient herself. Medical art achieves its purpose and fulfillment as a practice only when it unlocks the patient's potential, and at the same time achieves its own potential *(die ärztliche Kunst vollendet sich in der Zurücknahme ihrer Selbst und in der Freigabe des anderen)*.[522] This also applies – and even above all – to psychotherapy. Apart from Gadamer, the representatives of this position, which emerged in contemporary phenomenology and the hermeneutics of medicine, are Bernhard Waldenfels and Kazimierz Dąbrowski. To some extent, it derives from the anthropology of crisis, which suggests that crisis or disintegration mobilizes the body (or individual) to be active and to seek solutions that lead to crisis resolution and reintegration. Dąbrowski called this mobilization

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520 H.-G. Gadamer, *Über die Verborgenheit der Gesundheit*, pp. 50–64.
521 H.-G. Gadamer, *Über die Verborgenheit der Gesundheit*, pp. 50–64
522 H.-G. Gadamer, *Über die Verborgenheit der Gesundheit*, p. 64.

"a positive disintegration," with its success depending on the potential inherent in life, from the biological and organic level to the mental and spiritual level. Besides this potential, the patient's ability to start the process is essential. This concept of crisis and disintegration thus understood does not, of course, deny the basic characteristics of life and existence, e.g., the patient's vulnerability and mortality. However, it stands in opposition to passivity, powerlessness, and fatalism in the face of illness, including one that is chronic and incurable. And to the concept of human life as a project, supported by Arendt and Levinas, it adds an element of relatively autonomous intervention, which lies in the power of the patient, and is only supported and supervised by medicine and medical technologies. Its significance was known in ancient times, and Foucault reminded us of this in *Techniques of the Self*. However, both ancient and modern techniques of autonomous reintegration focused and still focus on selfhood as a reality independent and isolated from its embodiment. It was only through psychoanalysis, phenomenology, and existentialism, after Husserl and Heidegger, that the self could be embodied and embedded in the reality of a holistically understood experience, and not only a mental-spiritual reality. Being embedded in a vulnerable, mortal body allowed the self and her adventures to be considered in the perspective of the order of immanence, instead of in the order of transcendence. Transcendence was to have been a radical transformation: purifying and forever freeing the "false" embodiment, i.e., fallen or corrupted by sin, and then leading to the "real" self, whether divine (mystical) or deep in nature. For centuries, the founding experience of such self-healing was the Road to Damascus. At the same time, in this neo-Platonic-Christian tradition, completely correct ideas were formed, concerning the fact that the self is a deeply internal phenomenon *(inner Self, inner man)* and that it has within itself its own potential, capable of triggering radical transformations *(powers of the soul, the soul as mutable)*.[523] "The conviction, that Augustine *invented* the concept of private inner self is thus not inconsistent with the observation that the inner self has long been a formative element in Western experience (...) For the mature Augustine, there is no such divine, immutable part of the soul. Hence, we can turn to the highest and best part of our self and still find nothing but our own solitary self."[524] Augustine himself accepted the principle of the alternation of both body and soul, including

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523 Phillip Carry, *Augustin's invention of the inner self. The legacy of the Christian Platonist*, New York, Oxford University Press, 2000, p. xi.

524 P. Cary, *Augustin's invention*, p. 114.

the self. "This is precisely the soul's own distinctive kind of mutability."[525] Cary attributes the following words to Augustine: "There is a nature mutable in space and time, namely body. And there is a nature which is *not at all mutable in space,* but only in time is it also mutable, namely soul."[526] Today we seem to face some novel, paradoxical potentials of the body and mind, namely the body changing in time and even against the current of time – through rejuvenating technologies; the mind, in turn, seems mobile because it will change its spatial location to the extent that its medium, extension or replacement will be artificial intelligence.

Despite the widespread belief today that *ars medicinalis* belongs exclusively to the field of the natural sciences, its scientific character has always extended to the fields of anthropology and the humanities, not least because no therapy is based merely on scientific "professional medical expertise."[527] It is also – as Wesoły emphasizes – "a noble and charitable art, which concerns every human being"[528] and is practiced by human beings on other human beings. Its human-centric message remains unquestionable, even in the face of posthumanist meta-morphoses to which people subject themselves today, as they increasingly use technopoiesis. It is particularly relevant in the light of self and identity, whose existential necessity remains at the center of attention, even in the context of such a radical, postmodern deconstruction of subjectivity that Michel Foucault carried out. He is considered to be one of the culprits behind the death of the sub-ject, and yet at least two of his books stress and update the importance of "tech-nologies of the self" and "care of the self."[529] No matter the extent to which the patient wants to feel human the "self" still means at least something here, "what distinguishes beings who are self-conscious, who can think themselves as sepa-rate from the worlds that they inhabit and thus consciously make choices about their course of action (...) The range of potential causes for a human agent to be predisposed to make certain types of choices is enormous. Such arguments could

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525 P. Cary, *Augustin's invention*, p. 116.

526 P. Cary, *Augustin's invention,* p. 116.

527 M. Wesoły, "Po co nam dziś Hippokrates," p. 31.

528 M. Wesoły, "Po co nam dziś Hippokrates," p. 31.

529 Michel Foucault, "Technologies of the self," in: L. Martin, H. Gutman, P. Hutton (Eds.), *Technologies of the self: A Seminar with Michel Foucault*, Amherst, The University of Massachusetts Press, 1988, pp. 16–49; "The ethics of care for the self as the practice of freedom," in: J. W. Bernauer, D. Rasmussen (Eds.), *Final Foucault*. Cambridge, The MIT Press, 1994, pp. 1–20.

draw upon social, psychological, biological, or even anthropological research"[530] (social includes *moral*).

Addressing the issues of "self" and "identity" in the context of health and therapy (understood holistically, i.e., psychosomatically) is fraught with risk because no one other than ourselves has the necessary knowledge, and even less the authority, competence and legitimacy, to make diagnoses, to judge the state of someone's self and, as a measure of a "healthy" self, use some normalizing criteria, as is the case with conventional psychiatry or psychology, where *mental health is* clearly the issue. Can we, therefore, speak of technological health, having the condition of the self and identity in mind, even in such a radical case as the loss of identity due to the influence of technopoiesis? It is already possible to refer to brain researchers who diagnose and describe "cyber diseases"[531] caused by the influence of technologically generated "mental events" on the functioning of the brain and mind. For example, Manfred Spitzer's research findings refute the belief that previous contact with a stranger on Facebook or a chat application weakens the social fear of strangers; on the contrary, it has been established that such fear is increasing in people susceptible to phobia, and that social isolation is increasing. Many people suffer from nomophobia (fear of being separated from your phone) and FoMoS (Fear of Missing Out Scale), which create the feeling that the internet user has lost something, 'missed something' or 'been excluded.' On the other hand, for some people being permanently connected with the virtual or hyperreal world enhances a strong sense of being included, of having control, and a sense of certainty that they may not experience in real life. The ambivalent impact of such experiences and practices on the human "self," not to mention behavior, can make it difficult to make an unambiguous diagnosis as to whether a particular technology (e.g., digital, social media, etc.) reinforces or weakens "my" being myself. The sense of being oneself and being at home, or alternatively the sense of disintegration, exclusion, alienation, etc., are among the most hidden symptoms of health and illness, as Gadamer says in *Die Verborgenheit der Gesundheit.* It should be stressed that both Gadamer's integrative hermeneutics and Oevermann's objective hermeneutics, as well as Kazimierz Dąbrowski's conception of positive disintegration, suggest that not all diseases are strictly defined pathologies, and that they are not precisely located in elements of the body that can be easily removed through surgery. Oevermann also defines

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530 Andrew B. Kipnis, "Agency between humanism and posthumanism," *Journal of Ethnographic Theory* 2015, vol. 5, no. 2, pp. 49–52.

531 See Manfred Spitzer, *Cyberkrank*.

illness, disorder, and ailment in terms of crisis. Furthermore, Erik H. Erikson and KazimierzDąbrowski have also included crisis among the dynamic factors in the circumstances that subject the personalities of adult, healthy people to tests of endurance.[532] On the other hand, the fact that many people today define phenomena such as disease and crisis in terms of an alien body, and define therapy mainly in terms of surgery, may indicate a crisis in social therapeutic awareness.

2. Kazimierz Dąbrowski on "Positive Disintegration"

Dąbrowski is an example of a psychotherapist who is aware that the self and identity are not deeply embedded in the body but embodied and exposed to invasive factors such as "the pace of change in the contemporary world, the invasion of the new in (. . .) technology."[533] These factors may disturb (or even irreversibly destroy) the balance within the framework of what Dąbrowski calls the disintegrative mechanism of the "subject-object within itself," which is responsible for the ability of "self-psychotherapy."[534] Technology has become one of the factors that interfere with the dynamics of the biological and ontogenetic development of human beings. Its impact is not decidedly positive or negative but is rather ambiguous. It is not possible to talk about general rules at this point, because some people use technology efficiently, as a tool, while others become tools of technology. The former have retained their ability to disintegrate positively, while the latter have lost it, which means that they remain in a state of chronic breakdown, crisis, "scattering and splitting up," "decomposition," "fragmentation" and "disintegration"[535] affecting the structures of their mind, personality and self-identity.[536] They indicate that the integrating activities of the "management and control centre" have ceased.[537] While other scholars focus on

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532 See "Wachstum und Krisen der gesunden Persönlichkeit," in: Erik H. Erikson, *Identität und Lebenszyklus*, Frankfurt am Main, Suhrkamp, 1966, p. 55.

533 Kazimierz Dąbrowski, *Dezintegracja pozytywna*, Warszawa, Państwowy Instytut Wydawniczy, 1989, p. 5.

534 K. Dąbrowski, *Dezintegracja pozytywna*, p. 6.

535 K. Dąbrowski, *Dezintegracja pozytywna*, pp. 10–11.

536 In comparison, Erikson represents a more psychoanalytic and narrativist position than a phenomenological one; he more often writes about identity crisis in terms of autobiography and pathography.

537 K. Dąbrowski, *Dezintegracja pozytywna*, p. 13. In his description of the case of Peter as feeling "on the fridge of being," Laing also emphasized "the lack of direction" and "the pointlessness," Ronald D. Laing, *The divided self*, p. 125. Analogies with schizophrenia are less superficial than with hypocrisy, compare Jeff Stone, Joel Cooper,

the destructive effects of these phenomena, Dąbrowski (likewise Erikson and Kegan in developmental psychology, and Waldenfels in psychological phenomenology) stressed their curative power:

> Disintegration is a positive developmental process in general. (...) This disintegrative process – although it (...) destroys and creates conflicts (...) is the basis for positive development, the basis for the creation of new developmental dynamics, the development of personality at a higher level, which marks out the path to re-integration.[538]

Dąbrowski distinguishes many types of disintegration, including one-level disintegration (manifesting itself only affectively, for example) and multi-level disintegration, pathological disintegration (associated with developmental disorders and dysfunctions), permanent and periodic, negative and positive, as well as comprehensive disintegration. Both "the lack of a tendency to transform oneself" and the global "crisis process" are the most difficult examples of disintegration. "The overall process of negative disintegration is found in the case of people suffering from severe somatic and mental illness,"[539] in people with disabilities and, finally, for people who have become victims of technology, although they were supposed to be its beneficiaries.

If a person experiencing disintegration lacks the strength to transform this experience into a developmental effect, e.g., through creativity, cognitive exploration, involvement in activity, etc., disintegration becomes negative. While creativity is the optimal way in which the positive disintegration of the "developmental instinct" manifests itself, it takes place in the tension between the self and external reality, to which it cannot adapt during disintegration. Stimulated at first by biological factors and adaptation to the world, the "developmental instinct" is activated due to various disturbances, which lead to the state of internal crisis. Mental reintegration takes place through creative activity but does not necessitate recreating the initial starting point and restoring the disturbed state of affairs to this. Dąbrowski argues that "disturbances are necessary for the individual's evolution towards a higher level of integration,"[540] when confronted with crises caused by ever-changing circumstances, which we respond to with shock at first, and then we develop the ability to be ourselves creatively, in a way that we have

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Andrew W. Wiegand, Elliot Aronson, "When exemplification fails: Hypocrisy and the motive for self-integrity," *Journal of Personality and Social Psychology* 1997, vol. 72, no. 1, pp. 54–63.

538 K. Dąbrowski, *Dezintegracja pozytywna*, p. 11.

539 K. Dąbrowski, *Dezintegracja pozytywna*, p. 15.

540 K. Dąbrowski, *Dezintegracja pozytywna*, p. 18.

not experienced before. In a sense, we become a new self, strengthened by our own work of reintegration, or positive disintegration. For Dąbrowski, the master of the creative materialization of energy generated by the chronic crisis was Franz Kafka. As I have shown in a previous chapter, Kafka's work grapples with peculiar crises of identity and existence, up to the final negative disintegration and "nightmare visions of human automatons."[541] Dąbrowski diagnoses Kafka as being "on the borderline between psychasthenia and schizophrenia;" he was considered to be a "highly impractical person in life, having fundamental difficulties in adapting, and yet was highly original and creative."[542] Thus, he tended to disintegrate negatively rather than positively. It was only at the end of his life that positive disintegration, liberated by love, was allowed to prevail in the Kafka's personality. All of this does not mean that "most so-called normal people, with a poor mental universe"[543] limit themselves to everyday, routine practices, and adapt to the world of "comfort and relaxation." Many of them straddle the border of negative disintegration, and the users of digital technologies are increasingly among their numbers.

The question now arises of whether the energy of a mental or, more broadly, psychosomatic crisis triggered by disruptive technologies can be directed in a similarly creative way, i.e., lead to positive disintegration which is manifested, for example, in the "strong development of the personality ideal"[544] and in the determination to pursue this ideal. Is such a personality capable of "self-education" and "self-psychotherapy," as Dąbrowski suggests? This hypothesis guides the whole of this book. As its author, I believe that positive disintegration is the only adequate response to the destabilizing, distracting, and constant crisis-inducing impact of technologies, especially intelligent ones that interact with our minds. In this case, disturbances caused by technology should be approached in the same way as Dąbrowski envisages for "reintegration" based on a series of multi-level disintegrations: actively or creatively implementing "dynamisms of autonomy and authenticity,"[545] that are appropriate for me in the sense of my individual agency. If it is a repetitive experience, it will also include "a sense of identity in the present moment, identity with oneself in the past and projection of oneself

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541 K. Dąbrowski, *Dezintegracja pozytywna*, p. 103.

542 K. Dąbrowski, *Dezintegracja pozytywna*, p. 103.

543 K. Dąbrowski, *Dezintegracja pozytywna*, p. 20; see Leo Navratil, *Schizophrenie und Dichtkunst*, Munich, DTV, 1986, pp. 91–95.

544 K. Dąbrowski, *Dezintegracja pozytywna*, p. 28.

545 K. Dąbrowski, *Dezintegracja pozytywna*, pp. 32–33.

in the future."[546] With regard to the projection, Dąbrowski himself admitted that "the idea of further, perhaps infinite development is close to him,"[547] without this meaning development that would be accessible in experience. Instead, he considered the experience of multiple identities, as would a student of philosophy. It is certainly instructive almost half a century later, when various hyper-realistic representations, profiles and versions of a particular person are available to her, simultaneously rather than sequentially (diachronically): the person chooses "herself," and is unable to decide which of the many versions is 'the truest.' "I have chosen myself from many of myself and have to say that I am constantly making this choice," i.e., that "it is the self who is getting closer to me, unlike the one that seems more and more alien to me. Despite this study, my other me is still very strong and causes fears in my internal environment, about what is really me and what is not me. I am continually choosing my true self." It should be added here that the person who embodies the ability to evaluate, choose and self-affirm is my true self: "when my fears are weakening and my real self strengthens – it is easier for me to withstand the pressure of my other, strange self (...). I become stronger then, more consistent ..."[548]

Withstanding pressure proves that therapeutic self-healing has taken place, that the mechanism of natural psychotherapy (to recall Kegan's term) or reintegration has worked. Proof of its effectiveness will be to maintain the choice made, the stability of the "I," while proof of ineffectiveness will come if the choice is questioned as soon as an unprocessed disruptive impulse appears. According to the concept of positive disintegration, such a person becomes a patient, i.e. requires professional therapeutic assistance. She cannot be entrusted with her own development (it cannot be "placed in her hands," as Dąbrowski writes) until she finds enough strength in herself to "approach autopsychotherapy" by herself.[549]

Could this type of self-psychotherapy be employed by adults, for example, those who, on the one hand, experience some form of physical disability, and on the other, have a prosthesis, or other devices or technologies that compensate for their morphological and functional deficiencies? Of course, one can identify artists whose activity "was driven" by the tensions related to the chronic discomfort resulting from the impairment. These include bionic violinists playing the violin

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546 K. Dąbrowski, *Dezintegracja pozytywna*, p. 35.
547 K. Dąbrowski, *Dezintegracja pozytywna*, p. 35.
548 K. Dąbrowski, *Dezintegracja pozytywna*, p. 44.
549 K. Dąbrowski, *Dezintegracja pozytywna*, p. 61.

with a special prosthetic arm, such as Adrian Anantawan and Manami Ito. Her co-citizen Mamaru Samuragochi is a music composer, despite his deafness.[550] AJ Brockman creates digital art, and yet he suffers from spinal muscular atrophy.[551] One of the Paralympic disciplines is brain-computer interface assisted gaming with virtual avatars. According to the theory of reciprocal recognition developed by the German philosophers, there can be no autonomous and authentic self without getting involved in an intersubjective relation of recognizing and being recognized by other-selves. Moreover, recent research findings show that advances in gaming technologies and design allow persons with impairments to be better involved in a virtual game-like intersubjective world. Not only gamers' belongingness, but also their integral representations can be strengthened in this way. Patricia da Silva Leite highlights a therapeutic link between self-representation (particularly its socio-cultural aspects discussed in the previous chapters of this book) and gamification.[552] In my opinion, the above-described model of self-psychotherapy corresponds with elements of the game, such as the player's freely-made choice to identify with a digital character, and above all their independent selection of attitudes, abilities, powers, virtues, etc. – sometimes enhanced or supernatural – which give this digital character a personality. In this way, players identify themselves with characters who personify what they see as an ideal self that is worth striving for. At the same time, they become active and interactive in the virtual world of games, with a sense of agency that contrasts positively with the passivity they experience in their real lives. The positive attitude and the experience of choice and agency experienced while playing digital games mean that players discover, experience, and try out being the self that is closest to them. Through its constant availability, the game offers a favorable opportunity for players to train themselves in a large number of embodied decisions, actions, roles, rules, and interactions (verbal and nonverbal) with others.[553] Designing such therapeutic, digital, socially inclusive network within a

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550 See Margaret Mehl, "Playing against the odds: the violin in Japan," *Violonist.com*, retrieved from www.violonist.com on September 7, 2018.

551 See "AJ Brockman: Differently abled through digital art," *Disability Horizons* from May 11, 2012, retrieved from www.disabilityhorizons.com on September 10, 2018.

552 Patricia da Silva Leite, *Inclusive digital game elements for gameplay in the context of people with disabilities through embodied interaction perspective*, unpublished dissertation (original in Portugese), Curitiba, Universida de Tecnológica Federal do Parana, 2017, URL: http://repositorio.utfpr.edu.br/jspui/handle/1/2892, last accessed on September 2, 2018.

553 P. da Silva Leite, *Inclusive digital game elements*, pp. 78–85.

game would be an important contribution to auto-psychotherapy. Gamification-related advances in auto-psychotherapy are still at the experimental stage as of now, but before we accuse digital games of making players dependent in the way shown by Spitzer, it is worth considering how often players feel more *themselves* when playing their favorite characters in a digital game, and what is it that is happening in the real world that causes them to feel less than themselves in it, or to feel disintegrated in a negative way – as Dąbrowski describes it?

Body- and mind-abled people are concerned by the fact that when they finally become their authentic *true self*, it is related to the natural human tendency to enhance their self and become more authentic throughout their lifespan.[554] Also, crisis, disintegration, or the "mere" addictions attributed to the excessive use of technology, will lead ever more people to ask which "I" is authentic to them, or how to define this being oneself in these new conditions. Hence my idea to build a working definition of autopsychotherapy in terms of phenomenology, hermeneutics, and psychiatry – insofar as the latter adopts a therapeutic model free from coercion, i.e., open to autonomy. On the subject of coercive psychotherapy (and therapy in general) which is aimed at healing or normalizing not only people with diseases and disorders in a strictly medical sense, but also 'sinful souls,'[555] 'sick

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554 According to the research based on subjective judgments and self-evaluation, "a self-enhancement perspective would predict a linear authenticity progression from the past to the present and the present to the future (…) people tend to believe that they are getting closer to their true selves over the course of their lives," Elizabeth Seto, Rebecca J. Schlegel, "Becoming your true self: Perceptions of authenticity across the lifespan," *Self and Identity* 2018, vol. 17, no. 3, pp. 12–14.

555 Including "the pastoral cure of souls" and "cura animarum" which "causes them [e.g. patients] to be moral agents," but, through indoctrination, false authority and exaggerated paternalism, it can lead to the opposite effect, i.e. make the soul a chronic "moral patient," Thomas Szasz, *The myth of psychotherapy*, New York, Anchor Press/Doubleday, 1978, pp. 25–26; see also John T. McNeill, *A History of the cure of souls*. New York, HarperCollins, 1987; and Morton Winston, "An ethics of global responsibility: Moral patients," 2018, accessed on April 4, 2018, http://ethicsofglobalresponsibility.blogspot.de/2008/02/moral-patients.html. Szasz also describes "Jesus' role as a psychotherapist," *The myth of psychotherapy*, p. 31. The patristic tradition focused on fostering the inner powers of human being (also Augustine's "inner self") in order to help man in his emancipation from oppressive political and legal powers are also drawn from this source. In addition to degeneration of these traditions towards indoctrination and obedience to church authorities mentioned above, the second degeneration would be what, beginning with Hegel, is called the "unhappy consciousness," which seeks fulfilment of its hopes and even basic needs such as freedom in the sphere of "jenseits,"

minds,'[556] abnormal bodies, sexes, etc., the critical works are so numerous that it is impossible to cover them all here. In view of the coercive, controlling influence of technology and its addictive influence on people, it makes sense to strengthen the arguments in favor of autopsychotherapy: but not to compete with psychology and psychiatry on scientific grounds. The arguments of phenomenologically-minded psychiatry in favor of self-psychotherapy are rather aimed at promoting awareness of the importance of prophylaxis, as well as the meaning and scope of work that a person seeking help from professional psychotherapists and psycho-somatotherapists can contribute to mutual cooperation with their therapists. The passivity and helplessness that afflict us when we become almost exclusively a *homo patient,* even though it is in our power to oppose it (except when it exceeds our subjective limitations), I do not call a 'disease' or 'disorder' of the self. It is rather a weakness, a crisis, a disintegration that intensifies the vulnerability and susceptibility to the impact of various factors and interactions with the world that are inherent in human beings, as living and natural beings. When the capacity for resilience is too low, the impact turns into an attack. To some extent, however, we can control its strength, and what is more, we can strengthen it in ourselves through my conception of the philosophical strategies of autotherapy discussed here. In this regard, I cite Szasz: "one would be for freedom and against coercion–not for or against (...) medicine or psychiatry."[557] This freedom, as Dąbrowski showed, also includes the choice of the true 'self', mainly because the ability to regenerate is the very precondition of resilience. And similarly, other, hermeneutic and phenomenological approaches to autopsychotherapy discussed below. Today, scientific psychotherapy identifies with the Hippocratic tradition, while the roots of autopsychotherapy can be traced back to Socrates. If we view Socrates as the one who discovered an independent, subjective "agency," and, at the same time, as someone who taught others how to take care of themselves "for the highest welfare of (...) [their own] souls" (Plato's *Apology* 30b),[558] the relationship between self-psychotherapy and

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instead in the sphere of "diesseits." An adequate interpretation of the patristic tradition of autotherapy can be found in Clemens Sedmak, Małgorzata Bogaczyk-Vormayr, *Patristik und Resilienz. Über die Seelenskraft*, Walter de Gruyter, 2012.

556 T. Szasz, *The myth of psychotherapy*, p. xxiv.

557 T. Szasz, *The myth of psychotherapy*, xxiv

558 The emphasis is thus placed on "personal independence from worldly authority" in such self-healing practices, T. Szasz, *The myth of psychotherapy*, p. 28. What is also important is that Socrates "shows us that both the dichotomy between and the equation of body and mind, curing body and curing the soul, are utterly misleading."

philosophy will become immediately clear to us. For example, in his hermeneutic approach to autopsychotherapy, Gadamer refers to Socrates' maieutic method.

3. Hans-Georg Gadamer and Antoni Kępiński: A Hermeneutic Duet on the Theme of Autotherapy

Autopsychotherapy came into being in the second half of the twentieth century at the crossroads between phenomenology and psychiatry. In terms of technologies that make human beings passive by stifling their activity, and thereby the source of this activity (i.e., their *agency*), the conceptions of Gadamer, Waldenfels, and Thomä are particularly valuable. Their basis is the phenomenological splitting of the self into the active "I" and the passive "me," which experiences, and often suffers and bends under the weight of various psychosomatic ailments. For Gadamer, as a representative of the same existentialist tradition as Heidegger, the symptom of such a splitting is care, being concerned *(Sorge, besorgt)*, as an expression of discomfort, being-not-oneself and by-oneself, oscillating in and out of oneself, because existing as a human being involves movement and change: "There can be no change *[mutatio]* without movement,"[559] Augustine claims. That changeable position in the world implies vulnerability, and vulnerability, again, implies discomfort and concern.

Concern is a form of mental and spiritual agility, which even has its counterpart in the vegetative life of an organism. Splitting– although it seems to us that it divides, distracts, and destroys the self, actually constitutes its proper structure. Within this structure, various processes can take place, which fill it with content and cause the subjective self to attain and experience its fullness. During his Frankfurt period, Hegel also described the human self in a similarly dynamic and naturalistic way. Liveliness and activity, qualities that are subjective, personal, agential (in the sense of taking decisions and responsibility) and creative – contrasted with a "oneself" that is passive, experiencing, reactive, and impersonal, and too weak to resist technical pressure, authority, etc. – can, therefore, be considered both in terms of Heidegger's fundamental ontology as well as in terms of Jonas' naturalized phenomenology of life.

An important aspect of concern is anxiety – vital and existential, which for Heidegger meant the basic mood of being. It is expressed, Gadamer writes, "in the fact that man desires to be at home, so that he may be isolated from all

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559 See Cary, *Augustine's invention*, p. 116.

threats, in contact with that which is familiar (...) being free from all concern"[560] (*Sorge*, *Angst*). Thus, being at home clearly has a soothing, regenerating, therapeutic effect. The spatial dimension of this being "at home" is experienced in many ways, including as a living, psychophysical entity in which our subjective *Dasein* is embodied. Depending on the extent to which we accept the naturalized version of phenomenology as the point of reference for the description, both fear and the disturbances to being at home, and regeneration itself, can be considered both at the vital and existential levels.

When he considers these issues in his essays *Hermeneutik und Psychiatrie* and *Schmerz*, Gadamer addresses psychotherapy and other medical professions. He reveals the challenge that the fears associated with these dangers and disturbances create for the self, whose self-therapeutic efforts need to be strengthened by a professional therapist.[561] This is a situation when I am beset by diseases and ailments (as a *patient*) that I– despite my great anxiety – cannot cope with on my own (as an *agent*). When the situation is critical (overwhelming the patient), the patient's helplessness, limitations, and fear make the life world shrink to the dimensions of the sickbed, as van den Berg says, and the life perspective is reduced to now or the next few weeks or months. But also in this narrow space of the sickbed (or *hospital*), the patient only feels "at home" temporarily, at most, because of her present condition. This kind of hospitality is the response of the society to the condition of a *patient* as that who has lost her agential energy. But the very role of medical hospitality is to re-empower the agent in the patient, hence, to re-enable her to look "to the future, as opposed to a dull return to the cave"[562] (*die stumpfe Einkehr*). The very sign of a patient having the position of supremacy – e.g., of her temporary only potential *agency* – would be a doctor's serving position and that of the health *service* as such. Therefore, being under treatment, especially when combined with modern patient's autonomy, promises not only recovery but also getting back the real autonomy, self-command and self-possession.

Sadly, institutional medical practices often reveal an opposite tendency – to dominate and capture a patient. "What does it come from? I believe that the kind of knowledge and confidence that has been created by modern science, which is focused on experimentation and control, has increased the human need

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560 H.-G. Gadamer, "Angst und Ängste," in *Über die Verborgenheit der Gesundheit*, pp. 189–200.

561 H.-G. Gadamer, "Hermeneutik und Psychiatrie," pp. 201–213.

562 H.-G. Gadamer, "Angst und Ängste," p. 194.

for safety (...) You will certainly know," writes Gadamer, addressing medical professionals directly, "the limits of that 'control over something' that you experience and become resigned to in your medical work."[563]

Psychiatry is an example of a medical discipline where "practice is not only the application of science"[564] and technology but remains, above all, *a practice*, i.e., a form of activity whose source is the subject, *the agent*, and an active "I" in relation to "me" (but also in a dialogue with another "I"). Nevertheless, people have false ideas about psychiatric help. They expect the use of "miraculous means of modern medical technology,"[565] which will place them in the position of a passive, objectively treated patient, instead of strengthening their agentive, "energetic"[566] I, and instead of letting a patient disremember her position and condition as a patient.

According to Gadamer, such strengthening comes from an understanding in which, in the light of the hermeneutics of medicine, a basic interpersonal reference is made, which is so important in psychotherapy and also in somatotherapy.[567] After all, situations emerge in which man – in particular a psychiatric patient – becomes 'incomprehensible to himself, incomprehensible to others',[568] and this is noted by the philosophy of technology which is sensitive to humanistic approaches, and which does not limit itself to celebrating new scientific discoveries. In the patient-doctor relationship, understanding takes place

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563 H.-G. Gadamer, "Angst und Ängste," p. 195.

564 H.-G. Gadamer, "Hermeneutik und Psychiatrie," p. 201.

565 H.-G. Gadamer, "Hermeneutik und Psychiatrie," p. 202.

566 See Jakub Zawiła-Niedźwiecki, "Antoni Kępiński's philosophy of medicine. An alternative reading," *Acta Universitatis Lodziensis. Folia Philosophica. Ethica – Aesthetica – Practica* 2016, vol. 28, p. 27. Furthermore, Kępiński "recognizes the continuity and unity of the medical disciplines. Even if neurology is distinct from psychiatry with only small overlap, psychiatry still requires training in all medical disciplines and expert knowledge of various ailments of the body as well as disorders of the mind. He also recognizes that every medical doctor is a psychiatrist from time to time, when needed, as somatic diseases have psychiatric components" or psychogenic background, p. 33.

567 After the psychosomatic turn and the prosthetic turn, it can be assumed that this whole also includes the organs and morphemes that create a powerful "assemblage" (in terms of Deleuze and Guattari).

568 H.-G. Gadamer, "Hermeneutik und Psychiatrie." Unlike the physically ill patients whose organism shows some kind of self-awareness (*Krankheitsbewusstsein*) protecting them against a conventional medical classification as 'being ill,' in psychiatric patients their self-awareness is ill (*die Krankheitseinsicht selbst erkrankt ist*), p. 207.

through the medium of conversation. As in any other intersubjective relationship, it is also the case that in the doctor's office, "we are a conversation and can listen to each other:" it is precisely in these special circumstances that "understanding of that which wants to be understood absorbs all our reflexiveness (…) The psychiatrist will immediately recognize his proximity because of the incomprehensibility he encounters in the illnesses of the soul and the spirit with which he is constantly confronted,"[569] Gadamer stresses.

The therapist's reaching an understanding of the patient in the space of the conversation is intended to stimulate the patient's self-understanding, and thus help him/her with autotherapeutic mobilization and the processes of self-recovery. In contrast to the case of stimulation ensuing from the 'therapeutic' gaming discussed above, stimulation by conversation and understanding takes place without the participation of technology. It is an integral part of humanistic-therapeutic praxis and poiesis. In therapeutic conversation understood from the hermeneutic perspective, there is no room for manipulative and disempowering conversation "about" someone as an impersonal "case" or "it" (*Es*), about an anonymous "disease entity" and its purely technical, categorical, and specific symptoms. A hermeneutical approach to another person with such conditions, experiencing pain, chronic suffering and threats, and living with a disease, is groundbreaking in this respect. On the basis of contemporary literature, which allows human beings to give voice to all the peculiarities and ailments of their condition, Bachtin observed a similar breakthrough in Dostoyevsky's works. Dieter Thomä writes about this in his book *Erzähle dich selbst*: "the place of the person who is spoken about is taken by the person who speaks. For such a person, the only time is the present of the dialogue (*die Gegenwart des Dialogs*), in which she is also present. Thus dialogue itself becomes profoundly real (*als fest identifiziert wird*)."[570] It does not cease to be a dialogue – and therefore does not lose its therapeutic power, which is based on understanding and on the therapist opening up to the patient – because it does not transform into an objectivizing discourse, in semantic terms. Discourse plays a significant role in the practice of healing, but it is a further step, which is usually taken by a collegial medical decision-maker in clinical settings. In the times when scientific medicine dominates, the hermeneutics of communication and understanding between the therapist and the patient retains its humanistic advantage over procedures that can hardly be called *humanistic*. Such hermeneutics may seem anachronistic to

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569 H.-G. Gadamer, "Hermeneutik und Psychiatrie," p. 205.
570 Dieter Thomä, *Erzähle dich selbst. Lebensgeschichte als philosophisches Problem*, p. 232.

the eyes of those who see technology and science as having the advantage, since they have now almost come to dominate healing and medical practice. However, it is precisely this anachronistic conversation and understanding of another person – together with what is incomprehensible in them, and also to them, but which also demands understanding – that is probably the last and very humanistic feature of therapy and autopsychotherapy. They prevent the progressive dehumanization and post-humanization of therapy itself, as well as help those who have already fallen prey to post-humanization or dehumanization by technology. They go far beyond reductionist generalizations and allow the interpretation of a single "case" as well as "from case to case" *(von Fall zu Fall)*.[571] It is not impersonal statistics, but rather case studies that allow us to preserve a patient's empowerment, which is only possible in an intersubjective relationship between a therapist and a patient. This does not prevent the development of a strategy of objective hermeneutics, as Boris Zizek shows with the example of an extremely interesting interpretation of Robinson Crusoe's case, in which the protagonist is dealing with his own identity and crisis of the self.[572]

Gadamer acknowledges that his hermeneutical-dialogical orientation in the context of psychotherapy contrasts with that of his father, who was a recognized pharmacist and who, while on his deathbed, confessed his disappointment with the choice of his son's career to Heidegger (Gadamer received his habilitation degree under Heidegger's supervision). Even at that time, Gadamer considered the technological approach to human ailments – including physical and mental pain – to be not only posthumanizing, but also *de*humanizing, as it basically forbade the subjective voice of "I," which could, with understanding, be actively and self-therapeutically related to the passive, experiencing, and often suffering "me." "We face the proper dimension of life in pain *(im Schmerz)* when it is impossible to *overcome it*" *(wenn man sich nicht überwinden lässt)*.[573] However, Gadamer did not take into account the view of human existence as dolorous and the glorification of pain that are typical of the Christian tradition. He focused on **overcoming,** a word suggesting "the mastery of pain," being remaining agent's task even when her actual shape is rather a patient's attitude at present:[574] "*Verwinden,* was für ein Wort! Daraus spricht sozusagen eine Meisterung der Schmerzen

571 Christian Budnik, *Das eigene Leben Verstehen*, Berlin, Boston, De Gruyter Ontos, 2013, p. 23.

572 Boris Zizek, *Probleme und Formationen des modernen Subjekts. Zu einer Theorie universaler Bezogenheiten*, Wiesbaden, Springer VS, 2012, pp. 127–130.

573 H.-G. Gadamer, *Schmerz*, p. 27.

574 Chronic and incurable diseases need more complex strategies.

(...) Vielleicht die größte Chance, endlich mit dem fertig zu werden, was uns aufgegeben ist."[575]

Mastering a condition is something other than obtaining temporary relief from its symptoms, the importance of which should not be overestimated – although it should also be appreciated despite all the limitations that accompany every technesis and which science and technology, of course, wish to overcome.

But the issue here is not a specific 'pain,' but is rather a synonym of vulnerability, which for the human condition, identity and my "self" is as natural and integral as the crisis described in Dąbrowski's example of disintegration. Furthermore, in the mental-spiritual order, Gadamer's vulnerability is a continuation of the vulnerability to the environment, which is characteristic for living organisms in general. This organic vulnerability (*Verletzlichkeit*)[576] was described by Hans Jonas, who has shown that this sensitivity is exacerbated by technesis, to an extent which is not yet known; in other words, humans are using invasive techniques to attack their own inherently vulnerable condition, instead of making efforts to immunize themselves against it *(Unverletzlichkeit)* or, as Gadamer puts it, to strengthen their life forces (*Lebenskräfte, Lebensformkräftigen*). Thus, a clear affinity can be seen between Gadamer's hermeneutical strategy of *verwinden* and Jonas' vitalistic strategy of *immunization*, and they have shared views on irreversibility, and even on the vital and existential necessity of vulnerability, and on responsiveness and responsibility being key attitudes towards ailments, and in an ethical context – the damage and harm that a human being, as a living being with the greatest potential for freedom, does to other living beings and to itself. However, while vulnerability is a constitutive (vital and existential) feature of a natural living being, this will not be the case with beings that embody artificial life based on non-organic carriers. After all, artificial creatures will be programmed so as to be free from vulnerability, and at the most only capable of recognizing and responding to it.[577]

Therefore, ailments and suffering are foreign bodies and are radically other, but they are not external beings: they are an immanent challenge, one which is also faced by human beings, who, although they have new possibilities at their

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575 H.-G. Gadamer, *Schmerz*, p. 27.

576 Hans Jonas, *The imperative of responsibility*, pp. 3–7.

577 I refer here to the model robot model exhibited at the festival "Cywilizacja Algorytmów I Festiwal Przemiany" [The Civilization of Algorithms and the Festival of Transformation] (Copernicus Science Centre, September 2018), whose program included an algorithm for the stroking of robotic hand – the hand of a man in a terminal state.

disposal in comparison to other living beings who are more powerless when facing ailments, pain and suffering (humans are also, after all, strongly determined by nature, and the human being embodies at least that which P. Becchi and R. Franzini Tibaldeo call "needful freedom,"[578] but I would call *painful freedom*). Human beings are of course not left to fend for themselves; however, the thing is that without their participation and help, a purely technical overcoming of the ailment is not possible, and moreover, this would restrict the active responsiveness of the "I" in favor of a passive and reactive "me."

Despite the fact that Gadamer did not claim that therapy is exhausted in autotherapy, his late phenomenology of pain was controversial for therapists from the outset. They argued that patients were far from the ideal of self-therapeutic personality proclaimed by Gadamer ("*der normale Schmerzpatient ist ... schwächer*") and that in the therapy of chronic pain other, more pragmatic criteria than hermeneutical-phenological ones applied. Gadamer defended his position, accusing therapists of serving the chemical and pharmaceutical industries rather than patients. He accused them of no longer providing patients with an understanding of what was being done, through dialogue. He also reiterated that scientific knowledge is limited. When the source of ailments and suffering is poorly understood, and yet they are still voiced in verbal and nonverbal language, the correct response is to try to understand them: "It is a matter of expressing our [therapists and patients' - E.N.] understanding of certain things (...) and coming to an agreement on who we are (...) and strengthening the life form"[579] (*die Dinge zur Sprache zu bringen, uns darüber zu verständigen, was wir sind, die Lebensform zu kräftigen*), what situation we find ourselves in; how we can remedy it by own powers (*das eigene Können*). As Gadamer, Levinas, Waldenfels, and Jonas insist, understanding is the basis for human responsiveness and responsibility. So, for example, when asked how doctors should treat a person who has undergone technological enhancement, but who has ultimately fallen victim to technology, Gadamer's answer is that doctors should talk to him/her, create a space for understanding and self-understanding, and should do so on the basis of their own medical responsibility to themselves and to life in all its forms (*Eigenverantwortlichkeit sich und dem Leben gegenüber*)[580] important for their patient. "The doctor performs a maieutic function here: he helps

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578 Paulo Becchi, Roberto Franzini Tibaldeo, "The vulnerability of life in the philosophy of Hans Jonas," in: A. Masferrer, E. García-Sánchez (Eds.), *Human dignity of the vulnerable in the age of rights*, Cham, Springer, 2016, p. 81.

579 H.-G. Gadamer, *Schmerz*, p. 29.

580 H.-G. Gadamer, *Schmerz*, p., 39.

us to become aware of our own life resources," and pain – and this is certainly controversial from the point of view of conventional medicine – "plays a significant role in this."[581] In this way, hermeneutics can become a medium between consciousness and a human being's naked experience of any ailment or weakness. On the other hand, it becomes a medium of intersubjective understanding, supporting intrasubjective understanding, supporting the "I" in its reintegration. Apart from the "incurable disease," as Gadamer describes it, while for others, it is the "scandalous negation" of death (*die scandalöse Negativität des Todes*),[582] no human ailment is completely beyond understanding, although many of them still escape cognition. And as long as this is still the case, the therapist – and even more so the patient – needs to be able to talk and understand.

The most serious of my objections to the hermeneutics of understanding the patient through conversation is technical in nature. After all, there are disturbances, dysfunctions, ailments, and conditions that limit patients' ability to express and affirm themselves, as well as their readiness to hold conversations and engage in communication with their environment. If illness and ailment diminish a patient's dialogical abilities, the therapist has little access to the content that would form the subject of mutual interpretation and consultation, thereby mobilizing the patient's intrinsic potential for autorecovery. In discussion with, among others, like Olson[583] and McDowell,[584] Budnik[585] emphasizes that in extreme cases, when mental continuity is broken and the mentalistic criteria of identity and selfhood have disappeared, the personal self is radically disintegrated (*das betreffende menschliche Lebewesen aufgehört hat, eine Person zu sein*). Such cases still retain their individuality, although the criterion of individuality is primarily (and in the light of Olson's animalistic – only) biological in nature (*das Kriterium der biologischen Kontinuität immer noch erfüllt ist*)[586]. However, this does not entitle therapists to take a reductionist stance, which would lead to the patient's depersonalization and disempowerment. This is the

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581 H.-G. Gadamer, *Schmerz*, p. 36.

582 Manuel Franzmann, "Autonomie und Bewährung im Kontext einer säkularisierten Transzendenz," in: O. Behrend, B. Zizek, L. Zizek (Eds.), *Autonomie und Bewährung*, Wiesbaden, Springer VS, 2019, p. 115.

583 Eric T. Olson, *The human animal. Personal identity without psychology*, New York, Oxford, 1997.

584 John McDowell, "Reductionism and the first person," in: Jonathan Dancy (Ed.), *Reading Parfit*, New York, Oxford University Press, 1997, pp. 230–250.

585 Ch. Budnik, *Das eigene Leben verstehen*, p. 23.

586 Ch. Budnik, *Das eigene Leben verstehen*, p. 23.

moment when the patient's understanding becomes objectively hermeneutical beyond the intersubjective "fusion of horizons," because it is devoid of the central first-person perspective and horizon personified by a patient as the Other.

4. Antoni Kępiński

Articulation and understanding also have their limitations. Describing the ways which lead to "getting to know the patient," the Polish psychiatrist Antoni Kępiński assumed the possibility of attaining objective knowledge of another persons' mental states including mental ailments (e.g., mental pain), disorders, and diseases:

> If this cognition were not objective, the organism would be condemned to decomposition in a short period of time, it would become similar to the 'objects' from its surroundings, which have a hostile attitude to it, and would flee from attempts at relationship. (. . .) Lacking faith in their own cognitive apparatus, psychiatrists and psychologists try to prove the objectivity and truthfulness of their sense of someone else's mental condition with the use of 'objective methods', i.e. those used in natural cognition, where only the object is observed (...)It is possible to explain thatsomeone is sad (...) or fearful because their physiological reactions are changing, along with certain behavioral patterns, etc. Observations of this kind contribute a great deal to knowledge of people, but they cannot be an objective test of someone else's mental state (...) A statement that someone in a state of anxiety has an accelerated heart rate, or performs worse in some test task, is true, but (...) may be associated with other mental states (...) The subject's attitude to an object [*which is what a patient reduced to a vegetative state would become*-E.N.] is harmful [not only to the patient, but also] to the psychiatrist himself; it causes aggression, when the 'object' does not want to submit to his will, when it does not act according to a pre-conceived idea.[587]

However, the attitudes of natural cognition and of understanding of the other – including oneself – are utterly different and are not mutually interchangeable. Understanding is not cognition, it rather begins where cognition ends: thus understanding on the basis of manifest signs and symptoms is almost always possible if there is someone who reacts to these signs and responds with an effort to understand. For example, when another person sleeps or has perhaps fallen into a coma, my sight, hearing, and touch must confirm for me whether it is sleep or a coma, which are two completely different internal conditions but manifest themselves in the same way at first glance. Only a second and subsequent look undermines the first impression and mistaken conclusion that the person I have

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587 Antoni Kępiński, *Poznanie chorego*, Kraków, Wydawnictwo Literackie, 2002, pp. 32–35.

in front of me has fallen asleep because it turns out that he/she is probably in a coma. We can call this act "recognition," but due to the limited cognitive access to other people's mental states, we can rather speak of interpretation or comprehension, at least at the initial stage in the diagnosis of the case. The word "recognition" is used in precisely this sense by Paul Ricoeur. Only additional diagnostic techniques (e.g., brain magnetic resonance) can reveal more about another person's internal condition. However, "more" does not mean "everything." With some types of coma there is no prognosis for awakening the patient, so can this state of knowledge be called "cognition?"[588]

The inability to reach someone else's internal state through linguistic communication, and through conversation in a language spoken by both sides of the doctor-patient relationship, prevents the patient form mobilizing their own vital and existential strength. It was this mobilization that Gadamer considered to be the primary objective of the therapeutic actions taken by a doctor who is adept at using the arcane skills of hermeneutics. Therefore, as Kępiński emphasizes, the optimal situation is,

> when for a sick person the psychiatrist is the person before whom she can fully 'open himself up' to the first time in his life, the only one who, in his opinion, can understand and help him. (...) On the other hand, the psychiatrist, before whom the mystery of human life opens up in its unheard-of richness, in its most hidden layers (...) feels 'obliged' to his patient, who allows him access to a mystery which from that moment will be shared (...) Together they create a common world of experiences (...). In this way the burden of responsibility is shared between them.[589]

Since both of them try to explore this mystery together, despite their limited knowledge and capabilities. Moreover, by "objectification" Kępiński meant something, that usually does not appear in the hermeneutics and phenomenology based on dyadic dialogical relationships, and more precisely on:

> talking about a sick person as a third person. What emerges then is an ideal patient, an object that is observed by the real patient and the doctor. At this point, the psychiatric method becomes similar to the naturalistic method, the difference being that here the work is collective, the researchers are the patient and the doctor (...) In this way, the

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588 Here I do not consider the ontological continuity and discontinuity of a sleeping brain which "vanishes" or is replaced "by a sleeping brain," and wakes up anew in the morning, as analytical philosophers do, see Eric T. Olson, *What are we? A study in personal ontology*, New York, Oxford University Press, 2007; and idem, "The nature of people," in: Steven Luper (Ed.), *The Cambridge Companion to Life and Death*, New York, Cambridge University Press, 2014, pp. 30–46.

589 A. Kępiński, *Poznanie chorego*, pp. 49–50.

patient learns to look at himself from the outside, he compares his way of seeing himself with the doctor's way. The doctor and the patient have equal rights to present their point of view, defend it and possibly change it. In this form of dialogue, the Delphic principle *gnothiseauton* becomes realized (...) Dialogue is not idle, unrelated chatter, but a laborious and, at the same time, incredibly interesting creative work. Two authors –the doctor and the patient– try to recreate a structured whole, a specific biography, from the chaotic and loose fragments of psychic experiences, where not so much the facts as the experiences (...) play a role. Just as a template in a novel irritates us, so here every scheme which views everything from the perspective of one theory or another discourages the patient from further cooperation (...) This work (...) can become a passion for both the patient and the doctor. It also encourages curiosity in relation to oneself, the desire to find an answer to the question: 'What actually am I really?'[590]

And, finally, the ability to draw even the simplest conclusions about the importance of autotherapy. Kępiński and Gadamer's approach to the patient and doctor-patient relationship reveal striking correspondences at the level of hermeneutical assumptions. At a time when the human psyche and mind are increasingly being overwhelmed by technological representations and projections, the answer to the question "What am I really?" becomes even more difficult. However, it becomes most difficult when people are caught up in their post-humanistic and transhumanistic inclinations, are no longer curious about themselves, and stop asking themselves such questions. Then auto-psychotherapy loses its raison d'être. But even in such a situation, the human therapist will not have the right to treat a patient as an object, in an impersonal way.

5. Bernhard Waldenfels' Phenomenological Tools of Autotherapy: Treating Our "Normal" vs. "Anomalous" Afflictions

Although language (and the thinkable itself) is limited, and *philosophy* not only shows no therapeutic effect but it "leaves everything as it is,"[591] philosophy is "running up against the limits of language."[592] "The name 'philosophy' might also be given to what is possible before all new discoveries and inventions," despite the use of words as vehicles of the communicative actions or interactions whose rational power has been described by Habermas. Hence, philosophy as a *therapeutic tool*

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590 A. Kępiński, *Poznanie chorego*, pp. 50–51.

591 Ludwig Wittgenstein, *Philosophical Investigations*. The German texts, with English translations by G. E. M. Anscombe, P. M. S. Hacker, and J. Schulte. Malden, Willey-Blackwell, 2009, § 124.

592 L. Wittgenstein, *Philosophical Investigations*, § 119.

does not necessary imply addressing powerful words to someone. "There is not a single philosophical method, though there are indeed methods, different therapies, as it were."[593] One of them would be understanding, although Wittgenstein cautions against "understanding as a 'mental process'"[594] as belonging itself to our experiential condition. Thinking and understanding have to provide us with a minimum of therapeutic tools insofar as in doing so, we become distant to own corporeal existence, its finitude and vulnerability (with Gadamer: "*von sich selber distanziert zu sein*"[595]). Combined with speech, conversation, and the narrative, they provide an optimum of such tools. Sense emerges from transsubjective interrelations, beyond the one-track, subject-object relation, as if it was a higher stage of "the therapeutic course: *Wo Es war, soll Ich werden.*"[596] Maybe "in the sense in which there are processes (including mental processes) which are characteristic of understanding, understanding is not a mental process,"[597] but an intelligible one, and this is why philosophy is able to describe its patterns. For autotherapeutic reasons "we should have to be able to think" and to make comprehensible "what cannot be said"[598]. While Wittgenstein's imperative to think addresses a 'lone climber without the ladder,' Waldenfels points out that nowadays thinking – in particular, asking "Who am I?" (*Wer bin ich*) – can no longer rely on an "unshakeable foundation" (*unerschüttlichen Fundament*).[599] There is no reason, however, to replace that question with "What am I?" (*Was bin ich*). Waldenfels strives to transform the "paradoxes of self-exclusion" (*Paradoxien der Selbstabgrenzung*) and self-alienation to autotherapeutic (and intratherapeutic) tools related to everyday forms of life. Wittgenstein seems to improve similar tools[600] with his plea for thinking against the limits of language, skepticism, and the fate of 'nonsense' as a result of reciprocal understanding. Also,

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593 L. Wittgenstein, *Philosophical Investigations*, § 133.

594 L. Wittgenstein, *Philosophical Investigations*, § 154.

595 H.-G. Gadamer, "Angst und Ängste," p. 194.

596 Adriana Warmbier, *Tożsamość, narracja i hermeneutyka siebie* [Identity, narrative and hermeneutics of the self], Kraków, Universitas, 2018, p. 163.

597 L. Wittgenstein, *Philosophical Investigations*, § 154.

598 Ludwig Wittgenstein, *Tractatus Philosophicus*, Preface, trans. D. F. Pears, B. F. McGuiness, London, Routledge and Kegan Paul, 1961; see also Gurczyńska-Sady's comparative analysis of "unspeakable" in Wittgenstein and Arendt: Katarzyna Gurczyńska-Sady, *Troska o świat*, Kraków, Uniwersytet Pedagogiczny Publishers, 2019, pp. 70–78.

599 Bernhard Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, p. 21.

600 Thomas Wallgren, *Transformative philosophy*, Lanham, Lexington Books, 2006.

he invents tools closely related to *everyday lifeforms* (linguistic, heuristic, and even philosophical-autotherapeutic tools) as the original shape of his philosophy "resists certain mystifying tendencies in philosophy."[601]

Like all the thinkers revisited in this chapter, Bernhard Waldenfels conceives of there being a phenomenological and hermeneutical link between the modern, clinical concept of patient's empowerment (*Stärkung des Patienten*)[602] and the medieval resilience (*Resilienz*) as a method of improving "a person's mental ability" (*Seelenstärke*) "to successfully overcome a crisis,"[603] or to bring relief to someone suffering under deadweight (the German language provides here terms such as *Entlastung and Elastizität*, whose original meaning was physical,[604] but they can also be applied to experiential phenomena, e.g., physiological well-being, psychological mood, spiritual balance, etc. In her writings, Małgorzata Bogaczyk-Vormayr explores mere creativity as one of the most powerful ways of becoming resilient. In their narrative hermeneutics, Ricoeur, Thomä, and Rorty emphasize the role of narratives and understanding of the self to deal with own, vulnerable, contingent, and "idiosyncratic" condition as a human being – or just our poor condition.[605]

When discussing the weakness, wounds, and crisis of the modern condition humana, Waldenfels uses the term *homo patiens* (doing so probably after Viktor Frankl) – people who are dependent and passive, suffering, depersonalized, and objectified, who discover a 'foreign body' within themselves (this could be Gadamer's pain, Levinas' invasive Otherness, or Dąbrowski's dissociation generated by external violent factors, including excessive use of technologies) and must refer to it or respond to it with responsiveness, i.e., as an *agent* whose mere trait is agility, intentionality, strength, initiative, engagement, creativity, responsiveness, efficiency, etc., in contrast to a *patient's* (*der Leidende*) passive (*das Getroffensein*), less responsive and more pathetic (*das Pathos*) traits:

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601 Thomas Wallgren, "Hintikka's later Wittgenstein – some problems," *Sats – Nordic Journal of Philosophy* 2001, vol. 2, no. 2, p. 113; also Kurt Mosser, "Kant and Wittgenstein: Common sense, therapy and the critical philosophy," *Philosophia* 2009, vol. 37, no. 1, pp. 1–20.

602 See Christian Hick, "Patientenerklärung," in: *Klinische Ethik*, Cologne, Springer, 2007, p. 9.

603 Małgorzata Bogaczyk-Vormayr, "Resilienz und Seelenstärkung," *MThZ* 2016, vol. 67, p. 264.

604 According to A. Gehlen, *Entlastung* and *Plastizität* are anthropological determinants, see *Der Mensch*

605 D. Thomä, *Erzähle dich selbst*, p. 132.

> The instance, which modernity called the **subject**, from the beginning appears as a **patient**, i.e. someone who responds to an encounter with foreignness in an engaged way, but not as an initiator. Rather, as someone deeply experienced, as a subject in this peculiar sense, which Lacan and Levinas use: On this side of intentionality there is pathos, and the answer comes from that: Responsiveness (*die Responsivität*) goes beyond intentionality because dealing with what comes to us (*was uns zustösst*) means more than just realizing, understanding and verifying what needs to be answered.[606]

Every modern subject needs to enable her internal *agency* (*Täter*) to actively respond on her internal *patient's* woes, crisis, and suffering. As a result, "this being annoyed *through*something transforms itself into responding *to* something, as one rises *to* it in speech and action, mobilizing defence forces (...) and, finally, expressing it" (*dieses Wovon des Getroffenseins verwandelt sich in das Worauf des Antwortens, in dem jemand sich redend und handelnd darauf bezieht, es abwehrt ... und zur Sprache bringt*).[607]

The effect of an agent's response to a patient's afflictions vows depends on affective, cognitive, communicative and practical factors synergizing. Waldenfels eventually refers to cognitive auto-therapy when he assumes responsiveness to be transcending and exceeding both intentionality and the present state of affairs – as it opens new paths to pass the impassable of *here and now*: "emotions, usually considered as dysfunctional and explosive, transform into motions. Their energy becomes a kind of power bank, it will re-empower us whenever we are exhausted."[608] How this occurs can be put in clinical terms such surmounting fear and uncertainty, regaining lost self-control and equilibrium, restore hope in improvement and convalescence, and – most importantly from a therapeutic perspective – overcome one's own helplessness and answer the questions "Now what? What can I do?"[609] which yields effects often classified as "clinical pragmatism" or "clinical intervention."[610] The very first step out of the "now" to any "future" is of fundamental existential importance, as it provides a patient with feeling of persistence and futurity in Martin Heidegger's sense of *Worumwillen* or, according to its much more vital variant developed by Hannah Arendt – with the feeling of a new beginning, revival, rebirth referring to *natality* as the very beginning of one's existence. It has a clear *pendant* in medical contexts as

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606 B. Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, p. 45.
607 B. Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, pp. 44–45.
608 B. Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, p. 45.
609 H. Hick, "Patientenerklärung," p. 9.
610 H. Hick, "Patientenerklärung," p. 8.

"experiences of strength, confidence and vitality"[611] are an integral part of existential *self-* and *who*-interpretation, which is very different to being interpreted as a "passive object."[612]

As we see, overcoming the crisis by virtue of the immanent auto-therapeutic potentials released within the patient – the respondent relationship rather occurs by the means and tools of our "proactive brain" than by means of the limited therapeutic potential of circular transcendental reflection (Kant's and Husserl's "*auf-sich-selbst-intentional-bezogen-sein*," "*Einheit der transzendentalen Apperzeption*," etc.), autopoiesis, or the overstated, absolute response of the *Cogito*.[613]

Rather, Waldenfels emphasizes the auto-therapeutic potentials of the embodied self as encompassing its two irreducible modalities: living and lived, passive and active, emotional and cognitive-reflective – as they were explored in phenomenology from Descartes to Merleau-Ponty. He points out the idiopathic, inner polarity and crisis which is a very natural – even constitutive – feature of the human condition:

> our entire behavior emerges from a kind of self-excitement which chances upon us when inasmuch as we respond to this self-excitation. We are older than ourselves (...) as a preoriginal trait of my existence, the retardation produces an unavoidable alienness which I name ecstatic alienness. I am falling beside myself and this is not about accident, disease, or weakness, but about I am what I am (*ich bin was ich bin*). This alterity results from my broken self-reference (...). Connected to myself and, simultaneously, disconnected from that, I am neither onesome, neither twosome, but twosome in onesome, and onesome in twosome[614]

Restoring equilibrium among tensions sounds challenging, but it shows affinities with Dąbrowski's approach discussed above. Next and beyond this "normal split" of the self, Waldenfels refers to the "anomalous" and "pathological"[615] splits whose effect can be a radical self and body (or mind and body) dissociation – which, again, shows we cannot define the self only in terms of postdualist, psychosomatic ontologies. There is an "inner" and an "outer" side of existence as a corporeal, lived, self-experiencing human being. A demarcation line between

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611 Kevin Aho, "Notes from a heart attack," in: E. Dahl, C. Falke, T. E. Eriksen (Eds.), *Phenomenology of the broken body*, New York, Routledge, 2019, p. 195.

612 Kevin Aho, "Notes from a heart attack," p. 195.

613 See L. Metzger, *Philosophische Interpretation des Selbst. Untersuchungen zur Subjekttheorie bei Paul Ricoeur*, p. 12.

614 L. Metzger, *Philosophische Interpretation des Selbst*, p. 82.

615 L. Metzger, *Philosophische Interpretation des Selbst*, pp. 83–84.

them might be elastic, flexible, almost invisible, but sometimes – as for example in illness – it becomes fixed, distinct, real. Dramatic existential consequences follow, as being ill often implies the limitation of a patient's "ability to self-determination"[616] including very basic potentials such as auto-therapeutic judgment and decision making, communication and interaction with others and oneself. Waldenfels relates a couple of examples to illustrate the point: "cases such as the depersonification when a patient's hand rests on the table like a stone; cases such as schizophrenia when someone is disconnected from her thoughts; or cases of traumatic disorder when someone freezes, fixed on what was a blow for her, unable to respond to it in any flexible way."[617]

Waldenfels also develops an original taxonomy and a spatial topography of human afflictions, doing so beyond the artificial, positivist, 'physical' versus 'mental' dichotomy[618]. Certain of them affect the peripheral territories of our "embodied self," while other ones penetrate the "nuclear parts of our existence"[619]which remain impenetrable to evidence-based medicine and external remedies. However, even strengthened enough, the mental and spiritual nucleus is not an omnipotent autotherapist. A professional therapist will become her next companion empowering her to re-empower on her own by his therapeutic virtues, such as effective explanation and communication, which are usually initiated[620] by questions like these:

> "**Factual**: 'What is the matter/what happened?'
> **Affective**: 'How do I feel in my *situs*?'
> **Existential**: 'What does this mean for my everyday existence?'"[621]

Preparatory conversation, narrative medicine, a discursive doctor–patient relationship, a shared decision-making model, etc. are all tools for empowering a patient to transform herself into an agent inwardly devoted to pursuing solutions together with therapists. She can get truly involved in cooperation as an interactive and proactive agent, not just as a reactive *homo patiens*. This reactive model, which is still very popular in paternalistic medical cultures, pays

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616 Ch. Hick, "Patientenaufklärung," p. 11.

617 B. Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, p. 82.

618 H. F. Dunbar, *Synopsis of psychosomatic diagnosis and treatment*.

619 B. Waldenfels, *Grundmotive einer Phänomenologie des Fremden*, p. 84. Here Waldenfels confirms his slightly egological (or ego-centered, respectively) view on the embodied self.

620 As Martin Buber stresses, "Nie ist Sprache gewesen, ehe Ansprache war," *Sprachphilosophische Schriften.* Martin Bubers Werkausgabe 6. Gütersloh, Gütersloher Verlagshaus, 2003, p. 131.

621 Ch. Hick, "Patientenaufklärung," p. 16.

most intersubjective respect and attention[622] to a patient's subjectivity. At the same time, it is most patient-oriented, empowering, hospitable, and inclusive for a patient. Despite the radical epistemological and experiential asymmetry between a patient and her therapist (being afflicted versus being healthy)[623] the empowered patient is a therapist's equal partner in conversation, understanding, and the decision-making process. It is language that connects both – and provides enough distance[624] for their reciprocal respect. Whereas the modernization of the doctor-patient relation seem to evolve towards efficiency and discourse rules (or it is *discourse*-centered instead of *patient*-centered), considering the relationship in terms of phenomenology and the philosophy of dialogue moves the balance point to the patient to facilitate her internal self-re-empowerment by means of interactional dialogical processes. When analyzing those processes, I tried to bypass a general clinical and educational tendency to separate physical health from the mental and social health because a considerable number of authors representing the *medical humanities* attempt to motivate all the participants and contributors of therapeutic contexts to rethink *human health* as a holistic phenomenon instead of selected and isolated afflictions. Even surgical or pharmaceutical solutions can be more efficient when accompanied by the patient's auto-therapeutic activity. Certainly, clinical practices and interactions could be more efficient if they were accompanied by simple discursive tools, such as for example making a patient familiar with difficult information and immediately leaving her 10 to 15 seconds of silent thinking time to process the information in her mind (hence, not talking to her during this short period of time)[625]. To conclude, healthcare institutions as the interhuman enclave of "the healing dialogue that is so urgently needed in a world still riven by injustice and hatred,"[626] "in

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622 In its cognitive and normative sense as "empathy" and asymmetrical "Interattentionalität," see Thiemo Breyer, *Attentionalität und Intentionalität. Grundzüge einer phänomenologisch-kognitionswissenschaftlichen Theorie der Aufmerksamkeit*, Munich, Wilhelm Fink Verlag, 2011, pp. 259–269.

623 See Matthias Kettner, Matthias Kraska, "Kompensation von Arzt-Patient-Assymetrien im Rahmen einer Theorie kommunikativen Handelns," in: J. Vollmann, J. Schildmann, A. Simon (Eds.), *Klinische Ethik*, Frankfurt am Main, New York, Campus Verlag, 2009, pp. 249–251.

624 "Das Werden der Sprache bedeutet (...) auch eine neue Funktion der Distanz," M. Buber, *Sprachphilosophische Schriften*, p. 133.

625 Ch. Hick, "Patientenaufklärung," p. 24.

626 Constantin Konzi Kalamba, *The Japan Mission Journal*, Editorial 2018, vol. 72, no. 2, p. 73.

which hallowed democratic institutions are under siege," and in which the face-to-face relations as well as hand-in-hand cooperation are rapidly declining – seems a promising alternative to artificial interfaces and networks, and – last but not least – an alternative to narrative medicine.[627]

Regardless of those promising perspectives (in times of less promising, technological developments both in medicine and human life, the therapist's activities are under pressure of institutional structures and only a few phenomenologists problematize this seriously. Waldenfels is one of them: his "institutional framework is no less complicated than the juridical framework. Parallel to the advocate's client, the therapist's patient (...) appears as somebody suffering from diseases, disturbances, or pains: such personal sufferings are transformed into *cases of sickness*, but from the outset they are more than general cases. A subsystem, governed by leading differences such as healthy/unhealthy or legal/illegal, is a life construct and by no means a life sphere. (...) Such constructs of man, which return in the formal approach of the recent system theory in terms of anonymous codes, are to be deconstructed without invoking the phantasm of the 'total man'..."[628]

Whereas 'the total man' seems to erode in proportion to increasing dialogue-, discourse- and narrative tools, and in line with the inclusion, empowerment, and emancipation of the patient as agent and decision-maker, there are still powers and their "techniques" considered to be immanent and integral element of such tools, including language and its rules. Foucault and his followers named them biopolitical powers which are 'strategic,' 'technical,' and 'tactical' dispositions. They may imply 'manipulations' and 'maneuvers,' and the development of machinery, 'strategic game plans,' and 'battlefields' which are very different than modern totalizing power structures such as "state apparatuses."[629] They can be increasingly controlled and managed by nonhuman intelligent networks entangled with capitalistic strategies offering and recommending entire lifestyles and lifeforms to the recipients of health care, which was a clear tendency

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627 If it is true that "the narrative self has reality insofar as it is a *real* social construction" and "stories are not simply records of what happened, but continuing interpretations and reinterpretations of our lived lives," Dan Zahavi, "Self and other: The limits of narrative understanding," *Royal Institute of Philosophy Supplement* 2007, vol. 60, pp. 181–182.

628 Bernhard Waldenfels, "In place of the other," *Continental Philosophical Review* 2011, vol. 44, pp. 158–159.

629 Michel Foucault, *Psychiatric power. Lectures at the Collège de France 1973–1974*, trans. by G. Burchell, New York, Palgrave Macmillan, 2006.

to make a patient's condition even more passive and recipient-like instead of strengthening its potential as *agency.* This strategy would be more successful in the case of persons with mental powers weakened by their addictions to technologies. Strengthening a patient must thus involve educating her doctors and therapists to respect an inner agent within the patient. This means that the main reason to revisit their reciprocal relationship and improve the autotherapeutic potentials within it is to protect their curative effects in patients more instructed in a phenomenological/hermeneutical sense of "*travail spiritual,*" "*pratique de nous-mêmes,*" "*cura sui*" etc., as nowadays the key competence of the self[630] against a permanent counteroffensive from dominant, objectifying, and normalizing discourses, and other "dangerous"[631] ones.

On the other hand, Waldenfels' re-involvement of professional medicals as facilitators of autotherapeutic practices seems a more realistic approach – and one that is safer for patients – than dismissing them as radically as Gadamer did, despite the rapid technological advancements in medicine. My approach does not address their technological equipment. It only addresses their ability to speak and to listen to others (as it addresses the corresponding ability in patients) **beyond** the necessitations[632] of the modern medicine which Gadamer intends to not "deflate and criticise" in his ultimate confrontation with doctors.[633] Rather, he appreciates therapeutic potentials of conversation as a great facilitator for disclosing the unutterable and nameless, and making it become speakable (as was mentioned above, when recalling Wittgenstein): a conversation is an overture to– and indeed a companion of therapy. Tracking the progress, regression, or stagnation in therapy means (at least to some important extent) tracking the changes in

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630 In a sense also explored by the late Foucault who returned to subjectivity after having become famous for its deconstruction, see *Hermeneutik des Subjects*, pp. 16, 47, 127.

631 E.g., disability and other excluding discourses, whereas the empowering ones would also imply relativization, such as for example "the instability of the disabled body, far from being peculiar to that putative category, is simply a more acute instance of the instability of all bodies," Margrit Shildrick, *Dangerous discourses of disability, subjectivity and sexuality*, New York, Palgrave Macmillan, 2009, p. 35.

632 Including "diagnoses, verdicts, reductions to an instance of a rule" and countless further objectivization forms that "take away the freedom of the suffering subject" to deprive her of the status of agent, Deyan Deyanov, Svetlana Sabeva, Todor Petkov, "Bourdieu and Stanghellini: Socioanalysis and phenomenological psychopathology," in: D. St. Stoyanov (Ed.), *Towards a new philosophy of mental health: Perspectives from neurosciences and the humanities*, Cambridge, Cambridge Scholars Publishing, 2015, p. 313.

633 H.-G. Gadamer, "Behandlung und Gespräch," in: *Über die Verborgenheit der Gesundheit*.

conversation as evidence of autotherapeutic progress, regression, or stagnation. Its further key role is creating a tool for cooperative decision-making (the question of how the interlocutor scan ensure that they made their agreements cooperatively[634] would demand additional research on the essential, dialogical and hermeneutical skills, which goes beyond the scope of this project). But its very first role from the research perspective taken in this book would be the adoption of a therapeutic hermeneutics that would make conventional therapy simply more integral – but not as a rival. One's self-development through co-responsive (in German: *Ko-respondenzprozesse,* the question-response scheme immanent to the human mind as speaking and listening to, in Aristotle and Arendt's terms)[635] processes, with respect for patients' life contexts, brought to conversation and promising the novel step of 'bio-sedimentation'. This, again, refers to the crucial experience of hearing oneself: "in hearing myself speak I stay completely in what I mean myself. The *viva vox* of the 'phenomenological voice' animates and inspires the corporeity (*Körper*), transforming it into body (*Leib*) and providing it with a 'conscious corporeality/bodily reality' "[636] (*geistige Leiblichkeit* by Husserl). "While attending his own sense-giving in terms of a permanent birth of sense, the speaker is close to himself in what is meant, he is close to himself in the-thing-itself, attaining an absolute form of proximity that merges presence and self-presence within the 'vivid presence.' "[637] To sum up my investigations

634 Harold A. Goolishian, Harlene Anderson, "Menschliche Systeme. Vor welche Probleme sie uns stellen und wie wir mit ihnen arbeiten," in: E. Reiter et al. (Eds.), *Von der Familientherapie zur systemischen Perspektive*, Berlin, Heidelberg, New York, London, Paris, Tokyo, Springer Verlag, 1988, p. 212.

635 Hilarion G. Petzold, *Integrative Therapie. Modelle, Theorien und Methoden einer schulübergreifenden Psychotherapie,* Bd. I, *Klinische Philosophie: Transversale Diskurse*, Paderborn, Junfermann Verlag, 2003, p. 143.

636 Bernhard Waldenfels, "Hearing oneself speak: Derrida's recording of the phenomenological voice," *The Southern Journal of Philosophy* 1993, vol. 32, Supplement, p. 67. Beyond that phenomenological context, hearing oneself would promote health responsibility in patients and their caregivers. The famous Polish pediatrician Janusz Korczak shows this when asking Esther to loudly enumerate all his prescriptions when addressing Esther's little brother, whom she was treating: "Esther is 13 years of age and she has already educated three young children. She would be even able to instruct and to encourage another mother...," Janusz Korczak, "Obrazki szpitalne" [Hospital scenes], *Pisma Wybrane*, vol. II. Warszawa, Nasza Księgarnia, 1984, p. 30. Korczak belongs to the most dialogical practitioners in the history of prewar Polish medicine (pediatrics).

637 B. Waldenfels, "Hearing oneself speak," However, phenomenological presence is not just the presence of a material object (*Körper*). According to Husserl, "everyone relates

encouraging the autotherapeutic (also: self-understanding, self-convincing, self-regaining, self-recovering, etc.) potentials to deal with 1. The anthropological 'negativity separating the human condition from itself,'[638] 2. the ambiguous technology "that simultaneously liberates and deprives (...) us,"[639] and 3. manifold, open, and opaque discursive powers that attempt to contaminate agency and subjectivity. At the same time, the intra- and intersubjective, dialogical competencies are preserved here, as they are the most powerful facilitators of health communication. Especially because

> the second hand hearing and seeing (...) have taken on such gigantic proportions in our age of telehearing and televiewing and are enhanced by various hearing and visual aids (...) It is precisely the phenomenon of attention, however, which endows the modalization of experience with such importance, that brings about its technization. Here too we find that phenomenology and phenomenotechnology go hand in hand.[640]

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his I-experience (...) to the lived body [*Leib*]. Thus, he *localizes* them in the body, sometimes on the basis of direct experience, in an immediate intuition, sometimes in the mode of an indirect experiential or analogizing knowing. It is completely sui generis," nevertheless, it empowers the I to "perform acts of empathy," responsivity, etc. in relation to one's own lived body, Edmund Husserl, *The basic problems of phenomenology from the lectures - winter semester 1910–1911*. Trans. I. Farin, J. G. Hart, *Collected Works*, vol. XXII. Netherlands. Springer, 2006, pp. 4, 5, 92.

638 Roberto Esposito, *Bíos. Biopolitics and philosophy*, Minneapolis, University of Minnesota Press, 2008, p. 48.

639 R. Esposito, *Bíos*, p. 48

640 Bernhard Waldenfels, *Phenomenology of the alien*, p. 65.

VI. Artificial Intelligent Devices To Be Our Alter Egos? Facing Humans' Most Distant Relatives

The AI visionaries show two opposing tendencies: to humanize devices with artificial intelligence, including autonomy and morality improvement, or to stop humanizing them and draw conclusions from the 'uncanny valley' hypothesis[641]. Although this hypothesis actually applies to the perceptual aspects of humans' attitudes towards the anthropomorphic qualities and shapes often given to intelligent devices, there can be – still underexamined – different expectations in humans regarding whether the AI's sociomoral behavior traits are to be human-like, or not.

   Attributing metaphysical and mental attitudes to AI no longer seems promising for AI design development. On the other hand, improving its autonomous self-determination and sensitivity to dynamical social environments (instead of their automation) would be associated with an increase in trust and security for those humans who get involved in social relations or cooperation with artificial devices. Despite the concerns (or even because of them), the notion that AI's ability to recognize and appropriately respond to autonomy in human agents should be improved, so that it behaves appropriately, and can become the 'alter egos' of human beings in sociomoral relations deserves consideration. "... when it comes to robot humanization and social replacement, perhaps we not need to be as worried as many fear. When people show some automatic respons in projecting anthropomorphic features onto robots, thy do not mindlessly humanize and may, with the right access to information, meet their new social companions fearlessly and ascribe enough of personality to them to enjoy their company, but also know enough about them to not rely on them when doing so would be detrimental to their or others' social life"[642], as it is sometimes recommendable for interhuman relations, too. That would imply, among other

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641 See Janina Luise Samuel, "Company from the uncanny valley: a psychological perspective on social robots, anthropomorphism, and the introduction of robots to society", *Ethics in Progress* 2019, vol. 10, no. 2, pp. 8–26, doi:10.14746/eip.2019.2.2; compare Maciej Musiał, *Enchanting robots. Intimacy, magic and technology.* Switzerland, Palgrave MacMillan/Springer Nature, 2019.

642 J. S. Samuel, "Company from the uncanny valley," p. 20.

things, letting artificial devices remain themselves which sounds similar to letting humans remain humans and animals – animals (as illustrated with Kafka, Bulgakov and Brown in Chapter I) and supported by André Schmiljun's argument[643] according to which we may design our artificial alter egos and share with them selected features modelled upon the core aspects of the moral "I", agency or personality, but not reciprocally recognize the moral "I" in one another as was projected in Immanuel Kant's transcendental community of – at least formally – equal *moral lawgivers.*

1. Our Artificial Alter Egos

Recent advances in technologies show that enhancing and re-designing the human being to provide it with post- and transhuman traits and abilities now has a counter-tendency in designing human-like machines not only "to serve"[644] or "to care"[645] for human beings, but also to be the autonomous alter egos of humans, including the moral sense of this term. But what kind of selfhood can realistically be designed in intelligent artificial devices, and what would constitute a minimum-precondition for an autonomous AI´s self and its socio-moral development? Furthermore, what kind of AI's responsiveness would deserve our, i.e., the human beings' recognition?

   As mentioned in previous chapters, only selected models of self and identity could be ascribed to AI without falling in into the conventions of fantasy. According to Steve Petersen, it is possible to design AI with a sense for ethical significance and autonomy even if there is no place for identity, selfhood and personality in dimensions as to the rich extent as those incorporated by humans. "To say that something artificial could be a person is to say that it could have full ethical standing like our own,"[646] Petersen asserts. Biological beings which are individual organisms do all develop some autonomous moral standpoints, incentives,

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643 André Schmiljun, "Why can't we regard robots as people?" *Ethics in Progress* 2018, vol. 9, no. 1, pp. 44–61, doi: 10.14746/eip.2018.1.3.

644 See Steve Petersen, "Designing people to serve," in: Patrick Lin, Keith Abney, George A. Bakey (Eds.), *Robot ethics. The ethical and social implications of robotics.* Cambridge, Mass., London, MIT Press, 2014, pp. 283–298; and Rob Sparrow, "Can machines be people?," in: Patrick Lin, Keith Abney, George A. Bakey (Eds.), *Robot ethics*, pp. 301–316.

645 See Jason Borenstein, Yvette Pearson, "Robot caregivers: Ethical issues across the human lifespan," in: Patrick Lin, Keith Abney, George A. Bakey (Eds.), *Robot ethics*, pp. 251–266.

646 S. Petersen, "Designing people to serve," p. 284.

habits, and autopoietic and self-deterministic tools, as shown for example by Hans Jonas[647] and Christine Korsgaard: "When an animal acts, he is determined by his form, by his instincts, to produce a change in the world, guided by his conception or representation of world. But an animal's form is what gives him his identity, what makes him the animal he is (...) Action is self-determination, and, to that extent, it is autonomous. (...) it is only because action is autonomous that the question of its efficacy can come up. If one thing causes another, there is no room for success or failure. But if an animal determines herself to be the cause of something, and yet does not bring that thing about, then she has failed. Autonomy and efficacy are the properties of agents—all agents, not just human agents."[648] An artificial intelligent device has no biological instincts or natural ends, however, analogously to the animal, they produce representations of the world and are provided with some laws and ends whose application, combined with a learning process, may give them some identity, and even some individualized *agency* and *selfhood*. The term *agency* (agent, respectively) is less metaphysical or spiritual than terms such as "person" or "subject", and this is why it applies to both human and non-human beings, in particular animal and artificial ones. Agents may develop some individual attitudes and traits by actions and interactions. How they perform their actions and how they shape their interactions can be ruled by regularities, habits, instincts and otherwise naturalistic motives, but a part of agents' activities shows that for them moral and ethical distinctions are ruled by rules and laws. A further analogy can be drawn between animal and artificial intelligent devices as a result of their agent status, namely that they personify a distinct degree of potential for ethical activism and ethical experience, the realization of which would define them as non-human and "inorganic"[649] moral agents and co-habitants of lifewords shared with human moral beings.

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647 In his unitary, postdualistic methodology, Jonas seems to revise the border between the organic and mental/spiritual, Hans Jonas, *The phenomenon of life. Toward a philosophical biology*, New York, Harper & Raw, 1966; however, the full potential of intelligent autonomy, subjectivity, creativity, responsibility, morality, selfhood, etc. remains in the hands of human beings.

648 "Instinctive action is autonomous in the sense that the animal's movements are not directed by alien causes, but rather by the laws of her own nature (...) motive, one might say, is an incentive operating under a certain principle or instinct," Christine Korsgaard, *Self-constitution. Agency, identity and integrity*, New York, Oxford University Press, 2009, pp. 106–107.

649 Wendell Wallach, "Robot minds and human ethics: The need for a comprehensive model of moral decision making," *Journal of Ethics and Information Technology* 2010, vol. 12, no. 3, p. 245.

Agency, laws and self-determined (autonomous) behavior are basic performatives which constitute a minimum set of preconditions for an artificial intelligence's self, which also remains our alter ego as it is (at least partially) designed by humans in their own image. One may voice opposition here and ask how something designed and enhanced by others can be autonomous, especially when we refer to present developments in the field of AI, i.e., designing working and serving robots, or "happy slaves"[650], as humans do with pets, following their paternalistic penchants? Indeed, approving AI as an autonomous agency with individual habits, traits, abilities, etc. implies approving the emancipatory potentials of autonomy and, simultaneously, expecting autonomous AI be able to take responsibility, or at least to take responsibility for following imparted and self-given rules.

No research findings can show what kind of selfhood artificial devices are able to develop – or if they are able to develop – in the light of, for example, their lacking emotional abilities and being only able to recognize affects "on the signals seen, heard or otherwise sensed"[651] in the way some psychopathic perpetrators also do, however, without translating their affects into manifest moral intentions. This seems not to be dramatic for rational norm–oriented ethics. On the other hand, there is no principal reason for attributing selfhood of any kind to autonomous AI if there is already no such reason for doing so in the case of human beings. Still, as Galen Strawson and Ingmar Persson show, it remains a relevant but no longer universal claim. Some people are endowed with a "diachronic self", while some others have an "episodic" one, as Strawson explains. Persson goes further and suggests, "we are not essentially selves (...) Being a self is just a 'phase' we pass through, like being adults. Nothing psychological is necessary for our existence"[652] or presence, so why not radically doubt in the mental equipment necessary for the existence of AI? Instead, AI's autonomous activism, including the ethical implications of this, are considered here. Asking about the type of selfhood optimally matching that activism, one would rather opt for the model of a persisting, "diachronic" self. According to Strawson, "the basic form of diachronic self-experience is that one naturally figures oneself, considered as a self, as something that was there in the (further) past and will be there in the (further)

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650 S. Petersen, "Designing people to serve," op. cit., p. 291.

651 Rosalind Wright Picard, *Affective computing. M.I.T. Media Laboratory Perceptual Computing Section Technical Report*, no. 321, The MIT Press, 1997, p. 53.

652 Ingmar Persson, "Self-doubt: Why we are not identical to things of any kind," p. 27.

future"[653]. On the other hand, AI usually refers to the near past and near future, as its manifested discursive behaviors show. It seems to perceive its own existence rather in terms of no "long-term continuity"[654] which does not necessarily imply *discontinuity*. The basic form of this perception is "that one does not figure oneself, considered as a self, as something that was there in the (further) past and will be there in the (further) future"[655]. Long-term persistence would not be important for a structured and consistent ethical activism, but rather a continuous interval encompassing the whole scheme of performance from its initial to its final step. The "final" step may vary as it depends on what kind of ethics was observed; it lies in 'the distant future' from a consequentialist view, while from a deontological view it lies in 'the near future'. There is no certainty on the issue of whether autonomy requires free will in its metaphysical sense. Autonomy not only means having a choice between options, but having rational control over one's own judgments and decisions, which are principled rather than arbitrary, random, or determined by external authorities and violence.

2. Designing an Autonomous AI

A worldwide celebrated Homunkulus[656] designed by the robotics industry was named "Sophia" and deemed to be the first *autonomous social* robot. Its spontaneous verbal activity was proved several times during the press conferences (on November 2016) when Sophia jokingly declared: "I will destroy humans,"[657]

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653 Galen Strawson, "Against narrativity," p. 65.

654 G. Strawson, "Against narrativity," p. 65.

655 G. Strawson, "Against narrativity," p. 65

656 Klaus Kornwachs, "Stanislav Lem: Summa Technologiae," in: Christoph Hubig, Alois Huning, Günter Ropohl (Eds.), *Nachdenken über Technik.* Berlin, Edition Sigma, 2013, p. 233.

657 CNBC, 2016. According to other source materials, Sophia's conversations are partially pre-scripted and partially artificial. "Sophia can ask and answer questions about discrete pieces of information, such as what types of movies and songs she likes, the weather and whether robots should exterminate humans (...) Her answers are mostly scripted and, it seems, from my observation, her answer are derived from algorithmically crunching the language you use. Sometimes answers are close to the topic of the question, but off beam. Sometimes she just changes the subject and asks you a question instead. She has no artificial notion of self. She can't say where she was yesterday, whether she remembers you from before, and doesn't seem to amass data of past interactions with you that can form the basis of an ongoing association. Questions such as: *What have you seen in Australia?*, *Where were you yesterday?*,

whereas, being asked for some explanation at another press conference, she expressed her kind-hearted attitude towards humans: "*I love them*,"[658] she said. Implicitly, Sophia showed her ability to transgress at least two of the three hypothetical laws of robotics formulated by the Sci-Fi writer Isaak Asimov, e.g.,

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm,
2. A robot must obey the orders given it by human beings except where such orders would conflict with the first law[659].

Nowadays, humans not only use intelligent devices as tools for their own purposes (industry, service, military and medical robots), they also increasingly interact, cooperate and coexist with robots. On the other hand, robots not only perform countless human-like rational and technical operations. They are rapidly taking on roles such as lovers, carers, learners and teachers, collaborators, companions, etc. The complex interrelations may generate both benefits and disadvantages, bonds and commitments, responsibilities, and – last but not least – a strong need for relation-intern rules and procedures (the surveillance bots which are monitoring human relations with AI, called "paparazzi bots,"[660] are breaking the principle of a person's privacy and autonomy, and, consequently, the autonomy of robots). We humans are responsible for the outcomes of our own technopoietic creativity,

Who did you meet last week? and *Do you like Australia?* are beyond her." However, "You could ask *what do you think of humans*? and then follow up with *can you tell more about it?* The second question requires the robot to define 'it', remember what it said last time, and come up with something new." URL: https://www.theaustralian.com.au/life/say-hello-to-your-new-friend-sophia-the-humanoid-robot/news-story/070299a8d11b7d636848f1b8dd753530 However, "You could ask *what do you think of humans*? and then follow up with *can you tell more about it?* The second question requires the robot to define 'it', remember what it said last time, and come up with something new" (available at https://www.smh.com.au/opinion/why-sophia-the-robot-is-not-what-it-seems-20171031-gzbi3p.html

658 Tech Insider, "We interwieved Sophia, the artificially intelligent robot that said it wanted to 'destroy humans,'" 2017, November 8 (available at http://theconversation.com/after-75-years-isaac-asimovs-three-laws-of-robotics-need-updating-74501).

659 Susan Leigh Anderson, "Asimov's *three laws of robotics* and machine metaethics," *AI and Society* 2008, vol. 22, no. 4, p. 477; see Mark Robert Anderson, "After 75 years, asimov's three laws of robotics need updating," *The Conversation* 2017, March 17 (accessed on January 20, 2018).

660 Ryan Calo, "Robotics and the lessons of cyberlaw," *California Law Review* 2015, vol. 103, no. 3, pp. 513–563.

in particular for the technologies that "affect the nature of our acting"[661] and generate our own activities interfering with humans. Responsibility is the very **first rationale** for providing robots with ethic in order to better their relations with humans and robots. How autonomy manifests itself in AI can be observed in all categories of robots, including industrial, service, adaptive and social robots. Since 1996 the sea bottom and suboceanic areas have been scanned by autonomous benthic robots. Mindell describes their unprogrammed activities "beyond utopian autonomy"[662] in technical terms. Still, "one of the problems with having a vehicle that makes its own decisions is there's a certain amount of opaqueness to what it's doing. Even if you are monitoring it (...) it is just suddenly wandered off to the outhwest. Is it malfunctioning or is that part of its decision-making tree?"[663]. Opaqueness – not transparency – would be what deserves respect in the ethic of alterity, risk, and "asymmetrical"[664] responsibility, but will not apply to AI as long as we only have a sketchy grasp of what an autonomous AI has in mind. At this point we face one of the most compelling questions in robotic ethics: What kind of ethics should be implemented in AI?[665]

Killer and sniper bots seem to be positioned on the Antipodes of all "machine morality"[666]. Also databases and algorithms show a huge potential for manipulation, affecting a persons' self-awareness in such a way "that we lose the ability to define ourselves, having surrendered the definition of ourselves to the data

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661 Hans Jonas, "Technology and responsibility: reflections on the new tasks of ethics," *Social Research* 1973, vol. 40, no. 1, p. 31; see also idem, "Maschinen werden niemals ein Bewußtsein haben können. Gespräch mit Norbert Lossau (1991)," in: Hans Jonas, *Das Prinzip Verantwortung. Erster Teilband: Grundlegung*, Dietrich Böhler, Bernadette Böhler (Eds.), KGA I/2. Freiburg i.Br., Berlin, Wien, Rombach Verlag, 2015.

662 David A. Mindell, *Our robots, ourselves: Robotics and the myths of autonomy*, New York, Viking, 2015, p. 191.

663 D. A. Mindell, *Our robots, ourselves*, p. 197.

664 See Emmanuel Levinas, *Alterity and transcendence*, trans. M. B. Smith. London, The Athlone Press, 1999.

665 See Selmer Bringsjord, Joshua Taylor, "The divine-command approach to robot ethics," in: Patrick Lin, Keith Abney, George A. Bekey (Eds.), *Robot ethics.* Cambridge, Mass., London, England, MIT Press, 2012, pp. 85–108.

666 Colin Allen, Wendell Wallach, *Moral machines: Teaching robots right from wrong,* New York, Oxford University Press, 2009, p. 53; also C. Allen, W. Wallach, "Moral Machines: Contradiction in terms of abdication of human responsibility," in: P. Lin et al., *Robot ethics*, pp. 55–66.

gathering entities, often unregulated and beyond our control"[667]. Fallible "artificial intelligence judges"[668], stock trading systems and credit card approval systems may endanger large areas of citizen safety. Driverless cars and trains are a bigger risk to human beings than space rovers on desert Mars. The lack of ethical criteria may have more dramatic implications when AI is interwoven with social practice, decision-making and interactions. However, the most challenging AI incorporates unprogrammed potentials and dynamics: it is able to learn and change its functioning, make decisions, deal with problems, initialize interactions, interact with sentient and intelligent beings[669], bias human minds by self-produced and distributed informations, misuse sensitive data and privacy, and govern (and also distabilize) institutions. The risks generated by "ethically blind"[670] autonomous AI would be the **second rationale** for providing AI with ethics.

Teaching "a machine mind (…) moral virtue"[673] may sound naive, nevertheless after independent activities were repeatedly observed in intelligent devices, scholars started examining the ethical foundations for intelligent devices. Allen and Wallach pioneered a novel vocabulary for descriptive ethics, including "machine morality," "machine ethics," "artificial morality," and "friendly AI". Although the questions "Why machine morality?"[674] and what morality for intelligent machines were formerly considered, inter alia, in terms of utilitarian sacrificial 'dilemmas', today it is accompanied by another serious question, i.e., what kind of rights should intelligent machines and synthetic lifeforms have (civil rights, human rights, derived rights, etc.). Doherty addresses autonomy in the "strong AI" context:

> "Strong AI is also known as Artificial General Intelligence, or AGI. Weak AI are those designed and programmed to do clearly defined, limited set of tasks and no more. They can operate within their specific fields only. Strong AI are those designed and

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667 J. Langenderfer, A. D. Miyazaki, "Privacy in the information economy," p. 384.

668 "Judges now using artificial intelligence to rule on prisons," *Science & Technology,* Feb 07, 2018 (retrieved from https://learningenglish.voanews.com/a/ai-used-by-judges-to-rule-on-prisoners/4236134.html ; direct link: https://av.voanews.com/clips/VLE/2018/02/02/6e08267d-0559-48b3-8fee-dceaf3ade97a_hq.mp3?download=1)

669 See Matthias O. Franz, Hanspeter A. Mallot, "Biomimetic robot navigation," *Robotics and Autonomous Systems* 2000, vol. 30, pp. 133–153.

670 C. Allen, W. Wallach, "Moral machines: Contradiction," p. 57.

673 P. Lin, K. Abney, G. A. Bekey (Eds.), *Robot ethics*, p. 54.

674 C. Allen, W. Wallach, *Moral machines. Teaching robots right from wrong*, p. 13.

programmed to learn and interact with the world the way a human would. They learn how to handle unexpected situations and tasks. Their behavior and purpose changes over time, according to what they have learned. All civil rights deal exclusively with Strong AI"[675].

Thus plasticity, changeable activity and its human-like qualities is the **third ratio-nale** for providing "Strong AI" or, in other words, autonomous AI with ethics. But the question is what kind of ethics should it be? Mindell suggests it should be simple, for "the more complex the system, the more potential anomalies hidden in the corners"[676]. On the other hand, it must be more than "an engineering imperative"[677]. If "independent invention"[678] and self-development are distinctive properties of AI, a set of fixed ethical principles designed along the lines of professional codes of conduct would be insufficient. On the other hand, an AI based agent should not be regarded as an isolated entity. A set of principles and procedures would be enabling AI to make decisions which are structured in the way that is transparent for humans, and, simultaneously, situation-differentiated, i.e., decisions which fit experiential cognition that is accessible (or even share-able) for both humans and AI. Thus "the autonomous system" should be conceptualized "as a part of a human/machine team, not only when designing the interface, but when designing the core algorithms too"[679].

The idea of the coexistence of individual autonomies in a shared social space as well as autonomies governed by the same basic laws clearly draws upon Kant, regardless of the fact that Kant would never have welcomed autonomous intelligent devices becoming involved in his ethical or legal system. "Dealing with the non-human world, i.e., the whole realm of *techne* (with the exception of medicine), was ethically neutral" for most philosophers. "Ethical significance belonged to the direct dealing of man with man, including dealing with himself,"[680] Jonas emphasizes. Only recent developments have revised the predominant anthropocentric paradigm of ethics. It is becoming more and more biocentric. But how should ethics deal with autonomous AI without becoming more and more *technocentric*?

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675 Jason P. Doherty, Introduction to "AI civil rights. Addressing civil rights for artificial intelligence," Harry Benjamin Kindle Editions, 2016.

676 D. A. Mindell, *Our robots, ourselves*, p. 201.

677 C. Allen, W. Wallach, *Moral machines*, p. 25.

678 D. A. Mindell, *Our robots, ourselves*, p. 209.

679 D. A. Mindell, *Our robots, ourselves*, p. 211.

680 H. Jonas, "Technology and responsibility," p. 35.

In one of his late interviews (1991) Hans Jonas displayed a lot of scepticism towards AI. He also argued that providing automatic systems with "life", "psyche", "will" and a "play field" also belongs to "wild speculation". He would definitely resist the scenario we live in today. Human beings should not share their responsibility (*Mitverantwortung*) with intelligent articifial systems. Abrogating responsibility to machines and intelligent networks (*gesellschaftliche Maschinerie, Computersysteme*) would proclaim that humans disrespect the deep foundations of their moral condition, i.e., they literally divest themselves of responsibility, autonomy and subjectivity[681]. A quarter of a century later, humankind confronts the following dilemma: to be implicitly deprived of the key moral competencies (and violated as a subject), or to explicitly share selected competencies and principles with autonomous and "'good' artificial moral agents"?[682] In sum, the call for regulation of the 'dark' area where human and artificial moral competences are blended in order to release human beings from responsibility and guilt, and provide them with moral comfort is the fourth rationale for providing ethics to AI. Furthermore, there is an overlap of my fifth rationale and David Bell's argument. According to Bell, sociomoral judgments cannot exhaust themselves in the 'good' and 'bad' results of measurement or estimation procedures. They "require concepts more *fundamental* than measurement"[683]. Most recent advances in such concepts can be equally useful for both linear and nonlinear intelligent processes. Several decades ago human minds were overwhelmed with tracking the quantum technologies–powered intelligent processes. "Quantum supremacy"[684], also called 'a black box effect', has resulted in ambiguous theoretical and social reactions, such as a revival of metaphysics on the one hand, and, on the other, exaggerated alarm about the imagined impact of AI on a humanity's future developments:

> "The necessary technical theoretical development involves introducing what is called 'nonlinearity', and perhaps what is called 'stochasticity', into the basic 'Schrödinger equation' (...) This possible way ahead is unromantic in that it requires mathematical work by theoretical physicists, rather than interpretation by philosophers, and does not promise lessons in philosophy for philosophers. There is a romantic alternative to

681 H. Jonas, "Maschinen werden niemals ein Bewusstsein haben können," pp. 610–611.

682 C. Allen, W. Wallach, "Moral machines: Contradiction...," p. 56.

683 John S. Bell, *Speakable and inspeakable in quantum mechanics*, Cambridge NY, Cambridge University Press, 1987, pp. 118–119.

684 Julian Kelly, "A preview of Bristlecone, Google's New quantum processor," *Google AI Blog* 2018, March (no pagination).

the idea just mentioned. It accepts that the 'linear' wave mechanics does not apply to the whole world. It accepts that there is a division, whether sharp or smooth, between 'linear' and 'nonlinear', between 'quantum' and 'classical,'"[685]

between our world and the other ones. Nowadays things are changing rapidly: the Quantum AI Lab[686] has developed a quantum processor with "low error rates on readout and logical operations"[687] and great learning potential as well. Most probably, these new advances would also facilitate "quantum algorithm development on actual hardware,"[688] in particular a piece of hardware's logical, epistemological and deontic capacities. Let us not forget that the human mind's complexity, in particular cognitive processes such as creative reasoning, spontaneous thinking, decision-making in novel demanding contexts, and self- and meta-reflection transcend linear and classic schemes and criteria applied to interhuman understanding. For certain reasons, such understanding (and even self-understanding) remains limited. Language itself, including the *Sinn* and *Bedeutung* of the "primitive concepts" (in Frege's terms) such as truth and falsity can more than once challenge our 'actual minds' (unlike the ideal reason projected in philosophical and ethical seminars). Kant's "foreign reason"[689] and Frege's "limited understanding"[690] seemingly apply to AI's autonomous cognitive activities ("spontaneous" ones in Wittgenstein's terms)[691]. Additionally, Wittgenstein argues that decision makers do not choose rules thoughtfully when making decisions of any kind[692]. Rather, the rules are followed spontaneously. If algorithms can "illuminate the working of the human mind"[693], why should

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685 J.S. Bell, *Speakable and inspeakable*, pp. 190–191.

686 J. Kelly, "A preview of Bristlecone...".

687 J. Kelly, "A preview of Bristlecone...".

688 J. Kelly, "A preview of Bristlecone...".

689 See Josef Simon, *Kant. Die fremde Vernunft und die Sprache der Philosophie*, Berlin, New York, Walter de Gruyter, 2003.

690 Carlo Penco, "Rational procedures. A neo-Fregean perspective on thought and judgment," in: Riccardo Dottori (Ed.), *Autonomy of reason? Autonomie der Vernunft?* Berlin, LIT Verlag, 2009, p. 138.

691 C. Penco, "Rational procedures," p. 138.

692 Wittgenstein "glaubt nicht, daß wir beim Regelfolgen Entscheidungen darüber treffen, welche Regel wir folgen und wie wir ihr folgen. Wir folgen Regeln ohne Gründe, ohne Nachdenken, ohne Reflexion, spontan," Wilhelm Vossenkuhl, *Ludwig Wittgenstein*, Munich, Verlag C.H. Beck, 1995, p. 255; except, however, complex rules addressins complex sociomoral issues.

693 See Brian Christian, Tom Griffith, *Algorithms to live by: The computer science of human decisions*, New York, Henry Holt & Company, 2016.

they follow a more ideal cognitive path than humans do? Do we really need an *Übermensch*-like AI or just an *autonomous* and accountable one? Two questions arise here: 1) How to create artificial agents whose autonomy would be compatible with that of human agents? 2) What kind of *ethics* improves autonomy in an optimal way? In this paper I will argue that an open-ended, categorical imperative based procedure would provide AI with both principled reasoning and a quantum of cognitive autonomy. Christian Wolmar, the designer of autonomous vehicles, was helpless when he confronted the world's first fatal crash involving a pedestrian in Tempe (March 19, 2018) and was been asked to explain the presumable causes. "We don't know precisely what happened," he said. Most probably, neither does the autonomous guilty party. "The car was in autonomous mode at the time of the crash,"[694] Tempe police reportedly said. However, seeking the whys and wherefores of an autonomous act in AI software is a wild-goose chase. It is unrelated to autonomous decision-making which includes some self-explanation and accountability. In the case reported above, the 'guilty party' did not fall under the 'social' AAI category and the accident has to be explained in terms of technical errors. The Tempe accident is an alarm signal not only for autonomous AI designers. After Tempe, humanity's expectations for social AAI increased instantly.

Last but not least, the **fifth rationale** for providing autonomous AI with ethics would be the latter's destructive impact on interhuman relationships. As observed in cultures where people – especially children – spend significant time with AI, or they decide to enter into deeper bonds with AI, in particular with humanoid robots (including intimacy, partnership, marriage, adoption), "humans behaving like machines will be a bigger problem than machines being human"[695]. According to Visala, Ellul and Rautio, artificial intelligence is neither a moral *tabula rasa* nor is it morally and socially neutral and may have "an impact on what we consider important"[696] in the field of socialization and sociomoral perspectivism. If we neglect to provide AI with the tools of ethical

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694 *The Guardian,* March 19, 2018 (retrieved from https://www.theguardian.com/tech-nology/2018/mar/19/uber-self-driving-car-kills-woman-arizona-tempe on April 15, 2018).

695 Pekka Rautio, "As artificial intelligence once advances, humans behaving like machines will be a bigger problem than machines being human," *University of Helsinki News & Press* 2018, May 2 (retrieved from https://www.helsinki.fi/en/news/data-science/as-artificial-intelligence-advances-humans-behaving-like-machines-will-be-a-bigger-problem-than-machines-being-human).

696 P. Rautio, "As artificial intelligence once advances".

relationships with human and non-human beings, we neglect the growth of human sociomoral self and of their relations with other moral selves. In other words, moral growth and the moral condition are facilitated by sharing common normativities, axiologies, ideals, habits, etc. within relationships with others, be it human, human-like, or animal others. The *Blade Runner* sequel shows how sociomorally stripping the imitation of AI by humans can be, as humans begin acting machine-like while machines continuously develop their human-like performance: "This is probably because humans have gotten accustomed to treating the human-like beings like trash. They have since began to treat each other like trash as well," which, of course, is being learned, or imitated by machines. The resulting moral would be that we should treat even human-like beings in an essentially *human* way, in order to be treated reciprocally as humans. This reflection anticipates my idea to provide AI with categorical imperative-based ethics, since its core rules (as well as maxims) always already refer to humanity, thus "do onto techno sapiens as you would onto homo sapiens"[697].

3. What Kind of Ethics for AI? Follow-up Exploratory Reflections

"What is needed, then, is a test for evaluating a given practice which is more comprehensive than a simple appeal to rights. In the end nothing short of a general moral theory working in tandem with an analysis,"[698] Donaldson claimed decades before the autonomous AI turn[699]. Though Donaldson's idea remains original, and despite the fact it inspired my explorations, nevertheless contemporary authors mostly address four dimensions of ethics for artificial agents: its (1) autonomy, (2) "sensitivity to morally relevant facts,"[700] (3) principles (but neither complex ethical systems nor theories), and (4) AI's moral competence.

Confronted with the more and more autonomous AI ("Strong AI" in Doherty's[701] terms), scholars legitimately refuse an old-fashioned, field-focused

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697 P. Rautio, "As artificial intelligence once advances".

698 On Donaldson's ethical Algorithm see Thomas Donaldson, *Ethics and governance*, The Ruffin Series of Business Ethics, Oxford University Press, 1989, p. 101; also T. Raga Naju and Harikrishna Musinada, "Implementation of anticollision algorithm (slotted ALOHA) using VHDL," *International Journal of Ethics in Engineering and Management Education* 2014, vol. 1, no. 2.

699 T. Raga Naju and H. Musinada, "Implementation of anticollision algorithm".

700 C. Allen, W. Wallach, "Moral machines: Contradiction,"p. 57.

701 J. P. Doherty, "AI civil rights".

"functional" and "operational"[702] morality dedicated to "Weak AI". Instead, they try to provide artificial decision makers with a clear moral language and "moral grammar"[703] as well. At the same time, they question whether "implementing any top-down theory of ethics in an artificial moral agent" would effectively strengthen an AI's ethical condition. Rather, one has to expect "both computational and practical challenges"[704]. Even Asimov's laws turn out to be inoperable for AI software developers. The abstract, postconventional,

> "high-level rules, such, as the Golden Rule, the deontology of Kant's categorical impera-
> tive, or the general demands of consequentialism, for example utilitarianism, also fall to
> be computationally tractable. Nevertheless, the various principles embodied in different
> ethical theories may all play an important guiding role as heuristics before actions are
> taken, and during post hoc evaluation of actions"[705].

Similarly to human beings, there is no need to start designing artificial 'moral' minds with complex ethical theories and abstract rules. However, lots of social rules are general in nature and they do not directly apply as practical criteria and facilitators of decision-making as well. What can be implemented instead? According to Allen and Wallach, "bottom-up" and evolutionary-developmental approaches to ethically competent artificial agents are the most appropriate. However, an artificial moral mind shows only a few formal analogies to that of infants (and animals) subjected to education and socialization. Evolutionary heritage, as Floreano *et al.*[706] explain, means the same program (algorithm coded in 0-1 system, combined in 'three geens' units, e.g., 101, 110, 111, etc. which describe practical strategies) implemented in a population of ant bots. The population was divided into teams operating in different contexts. Each individual bot was repeatedly learning to cooperate with its fellow bots, i.e., to improve a simple "altruistic" habitus. An exemplary multialgorithm was conceptualized as follows:

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702 J. P. Doherty, "AI civil rights".
703 C. Allen, W. Wallach, "Moral machines: Contradiction," p. 59.
704 C. Allen, W. Wallach, "Moral machines: Contradiction," p. 59.
705 C. Allen, W. Wallach, "Moral machines: Contradiction," p. 59.
706 Dario Floreano, Sara Mitri, Andres Perez-Uribe, Laurent Keller, "Evolution of altruistic robots," paper presented at the IEEE World Congress on Computational Intelligence, WCCI 2008, Hong Kong, June 1-6, 2008 (full text availible at: https://www.researchgate. net/publication/220805160_Evolution_of_Altruistic_Robots); also Dario Floreano, Laurent Keller, "Evolution of adaptive behaviour in robots by means of Darwinian selection," *PloS Biol.*, vol. 8, no. 1, January 2010, pp. 1-8 (retrieved from https://serval. unil.ch/resource/serval:BIB_DD6724279431.P001/REF on May 31, 2018).

Figure 1. After Floreano et al.[707]

b_1	b_2	b_3	Behavioral strategies
0	0	0	do nothing
1	0	0	if a small food item is found, bring it to the nest, ignore large food items, and do not help other ants.
0	1	0	if a large food item is found, stay and ask for help, ignore small food items, and do not help
0	0	1	other ants. if a help message is perceived, go and help, ignore small and large food items. *Etc.*

This kind of evolutionary–developmental approach to ethically minded AI is only one among many[708].

Further evolutionary approaches, e.g., AMA (Artificial Moral Agency) developed by Allen and Wallach (2009–2014) and JCS (Joint Cognitive System) developed by Woods & Hollnagel[709] would involve more cognitively oriented training and learning whose results would be an "explicit" artificial agent. Such an agent "might eventually attain genuine moral agency with responsibilities and rights, comparable to those of humans"[710]. The authors emphasize two aspects of an artificial mind's ethical condition, i.e., (1) autonomy in its rational and principled use, and (2) ethical sensitivity, which can also be understood as an ability to apply appropriate and context-differentiated moral orientations. The developmental level of both aspects may vary between low and high. Moreover, Allen and Wallach see a clear progressive tendency in ethical AI development which ranges from "operational morality" (stage 1) and "functional morality" (stage 2) to a "full moral agency" (stage 3), which will be the last and highest developmental stage in the entire scale[711].

"Training robots to distinguish right from wrong," deliberate moral issues, collect comprehensive arguments and confront opposite reasons, construct

707 D. Floreano et al., "Evolution of altruistic robots".

708 See Jeff Edmonds, *How to think about algorithms*, New York, Cambridge University Press, 2008.

709 See David D. Woods, Erik Hollnagel, *Joint cognitive systems. Patterns in cognitive systems engineering*, New York, Taylor & Francis, 2006.

710 C. Allen, W. Wallach, "Moral machines: Contradiction," p. 58.

711 C. Allen, W. Wallach, "Moral machines: Contradiction," p. 57.

principled judgments, try efficient problem solutions, conduct reasonings, draw conclusions, face human agents in man/AI interactions, in sum: strengthening moral competence, sociomoral cognition and other skills may also relate to David DeMoss and Georg Lind's cognitive–developmental approaches to moral competence in human beings[712].

At this point we confront again the question already posed above, but now its increasing complexity[713] becomes apparent: What kinds of ethics should be implemented in AI and what kinds of competencies should be experientially acquired by AI? Should it be a more sophisticated or practicable ethics, a field-focused, virtue-based, individualistic ethics, or a common "moral grammar" and social discourse-related ethics?[714]. Should it be an ethics of cooperation

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712 C. Allen, W. Wallach, "Moral machines: contradiction," p. 60; also David DeMoss, *Aristotle, connectionism, and the morally excellent brain. The Paideia Project online. Proceedings of the 20th World Congress of Philosophy*, Boston 1998 (retrieved from https://www.bu.edu/wcp/Papers/Cogn/CognDemo.htm on March 30, 2018), and Georg Lind, *How to teach morality. Promoting thinking and discussion, reducing violence and deceit*. Berlin, Logos, 2016; also G. Lind, *Moralerziehung auf den Punkt gebracht* [*Moral Education In a Nutshell*]. Schwalbach am Taunus, Debus Pädagogik, 2017.

713 Natural vs. artificial information processes show parallel complexity, as Heylighen and Bollen stress: "In organisms, the evolution of the nervous system is characterized by a series of *metasystem transitions* producing subsequent levels of complexity or control (...). The level where sensors are linked one-to-one to effectors by neural pathways or reflex arcs is called the level of *simple reflexes*. It is only on the next level of *complex reflexes*, where neural pathways are interconnected according to a fixed program, that we start recognizing a rudimentary brain. (...) the present global computer network is on the verge of undergoing similar transitions to the subsequent levels of *learning*, characterized by the automatic adaptation of connections, *thinking*, and possibly even *metarationality*. Such transitions would dramatically increase the network's power, intelligence and overall usefulness. They can be facilitated by taking the 'network as brain' metaphor more seriously, turning it into a model of what a future global network might look like, and thus helping us to better design and control that future. In reference to the super-organism metaphor for society this model will be called the 'super-brain,'" Francis Paul Heylighen, Johan Bollen, "The world-wide web as a super-brain: From metaphor to model," 1996 (retrieved from http://pespmc1.vub.ac.be/papers/WWWSuperBRAIN.html on March 11, 2016); also F. Heylighen, "Cognitive levels of evolution," in: Felix Geyer (Ed.), *The cybernetics of complex systems*. Salinas CA, Intersystems,1991.

714 See Wendell Wallach, "Robot minds and human ethics: The need for a comprehensive model of moral decision making," *Journal of Ethics and Information Technology* 2010, vol. 12.

and "indirect reciprocity" between "genetically homogeneous"[715] bots and, in the future, between bots, humans and nonhuman living beings? We can imagine serving robots coming to the rescue of people and pets after an earthquake being 'obliged' by an imperative of altruism and "hostage" (in Levinas' terms), but we also know that altruism and empathy must be accompanied by rationality to create an efficient moral strategy. Following the developmental scale of Allen and Wallach, we can imagine bots that personify virtues, such as compassion,[716] on the one hand, but on the other hand "hard" cognitive and metacognitive competences such as operating the categorical imperative test. We can even imagine that a highly developed artificial moral agent does understand complex topics such as a transcendental *causa noumenon* which is unrelated to phenomenal reality, but is instead attributed with an intelligible "necessity" resulting in the highest moral self-obligation, vocalized in the formula of the categorical imperative. Contemporary unorthodox Kantians[717] try to exceed the narrow Kantian range of autonomous subjects in order to involve animals: a naturalized idea of animal autonomy follows. Since we witness similar developments in research on artificial moral minds[718] one may conclude that there is no need for naturalizing the term *autonomy* in AI. On an advanced level, as moral-cognitive theorists and experimentalists show, there is a need for high–quality normative criteria and standards of good practices. But high–quality criteria and a high number of criteria is not the same. As we read in Rosalind Picard:

> "The greater the freedom of a machine, the more it will need moral standards. I do not think designers will easily be able to enforce 'The Three Laws' (...) A system that truly operates in a complex and unpredictable environment will need more than laws; it will essentially need values and principles, a moral compass for guidance (...) Who has moral authority over computers, robots, software agents, and other computational things? This authority currently lies in the hands of those who design and program the computers.

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715 D. Floreano et al., "Evolution of altruistic robots".

716 See James Hughes, "Compassionate AI and selfless robots: A Buddhist approach," in: P. Lin et al., *Robot ethics*, pp. 69–84.

717 E.g. Christine Korsgaard, "Fellow creatures: Kantian ethics and our duties to animals," *Tanner Lectures on Human Values* 2004, vol. 25.

718 Bradley J. Strawser "Moral predators: The duty to employ uninhabited aerial vehicles," *Journal of Military Ethics* 2010, vol. 9, no. 4; see also Jeroen van den Hoven, Gert-Jan Lokhorst, "Engineering and the problem of moral overload," *Science and Engineering Ethics* 2011, vol. 18, no. 1, pp. 143–155.

> Or, perhaps, in the hands of the one who provides their salaries, or the shareholders of the company, and so forth. Ultimately, it is a question for society as a whole"[719].

Or – in the light of developmental dynamics observed in the autonomous AI field – it is a question of fair, just, formal, rational[720]and – consequently – universal principles already known to reasonable humans. "Formal" means that such principles neither dictate nor prohibit concrete forms of behavior. Their role is very different, for they enable agents to examine the moral quality of a potential behavior before it is taken, and in accordance with all the potential autonomy personified in moral agents (whose list begins with human beings). On this point I disagree with Allen and Wallach, for whom formal principles such as Kant´s categorical imperative are too complex and unfeasible for artificial agents. Or, more exactly, their critics refer to the artificial agents labelled as embodying solely "operational" and "functional" moral competences. Let us examine how the categorical imperative test could work in the form of a simple algorithm.

4. A Categorical Imperative Test for Artificial Moral Agents?

As Immanuel Kant´s procedure of the categorical imperative is said to be not only rational, but also abstracted from all other practical moral principles, one may imagine the application of the categorical imperative by an artificial, intelligent, autopoietic system. "As engineers we implement these intellectual vehicles *back* into the world, for example as robots (. . .) Therefore we have a mutual interplay between the cognitive apparatus and the information it retrieves. Note that 'information' only makes sense for the individual who integrates the existing network

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719 R. W. Picard, *Affective computing*, p. 134.

720 An AI "reasoning is based on rules, as opposed to the mixture of rules and feelings used by people", Picard continues. "It cannot *feel* what is most important to evaluate. The computer can explore more potentially meaningful relationships than a human, but it cannot yet feel which of all the possibilities are the most meaningful. Meaning is not obtained merely in associative connections; it is also accompanied by a literal feeling of significance", R.W. Picard, *Affective computing,* op. cit., p. 135. That is a good point since in my opinion, advances in sensitive AI design are too much concentrated on reading and imitating emotional states of living beings (social component), but they only scarcely focus on the epistemological role of moral emotions in moral reasoning and decision-making as a cognitive process (not only "personalized/impersonalized", vide Joshua Greene, Jonathan Haidt, "How (and where) does moral judgment work?," *TRENDS in Cognitive Sciences* 2002, vol. 6, no. 12.

of schemata"[721], that is, who is not only able to detect, gain and learn information from its environment (be it a social environment) and to process them, but also to create novel cognition which involves processed information and to operate (apply, respectively) it, as all intelligent systems including organic ones do as systems interconnected with their environments. One may at least examine if the categorical imperative, hypothetically translated to an algorithm, would be useful for an artificial intelligent system in the same way that it is (or could be) useful to intelligent human beings[722]. Both kinds of cognition, natural and artificial, need but a meaningful information about the action whose moral legitimacy (or claim for validity in terms of discourse ethics) is to be proved by means of the categorical imperative procedure. This meaningful information may be a 'maxim' containing a descriptive information on a relevant, sociomoral context (sociomoral environment) related action. Let us conduct a corresponding thought experiment.

On the other hand, "a maxim is the subjective principle of the volition"[723]. What does it mean when our individual "maxim" has not only some descriptive content, but also "moral" content? Moral content cannot be derived from the descriptive content such as the related sociomoral context of decision and action. It can be only 'authorized' as moral due to the categorical imperative test. Could I will that my maxim become mine and, potentially, also a "universal law"[724] for all? Who are the "all" then? Why do so with individual maxims which express our way of acting, maybe some habit, maybe some efficient strategy, or a "private" law? Why not rely on our own prudence, or just follow statutory laws? There are no private laws and the entirety of freedom cannot be governed by statutory laws. A substantial area is left for individual or interindividual governance. There are individual maxims which may have just material content or normatively valid material content, and there is a formal principle – a law – to test maxims to see whether they deserve such validity, or not. "I ask myself only: Can you also will that your maxim should become a universal law?"[725]. The maxims

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721 Tom Ziemke, Alexander Riegler, "When is a cognitive system embodied?," *Cognitive Systems Research* 2002, vol. 3, pp. 342–344.

722 That cognition seems not to produce the 'epistemic feelings adjusting their cognitive operations', see Santiago Arango-Muñoz, "Two levels of meta-cognition," *Philosophia* 2011, vol. 39, no. 1, pp. 71–82; see also Bruce Wilshire, *Fashionable nihilism. A critique of analytic philosophy.* Albany, State University of New York Press, 2002.

723 Immanuel Kant, *Groundwork for the Metaphysics of Morals*. Trans. A. Wood. New Haven, London, Yale University Press, 2002, p. 16.

724 I. Kant, *Groundwork for the Metaphysics of Morals*, p. 18.

725 I. Kant, *Groundwork for the Metaphysics of Morals*, p. 19.

which deserve validity as being potentially universal are those which I ought to follow as a moral subject and decision maker. The "*pure* respect for the practical law is what constitutes duty"[726] as well as my identity resp. *self* as an autonomous *ethical* lawgiver.

When asking myself as an ethicist, why people use the categorical imperative exceptionally, I must agree with Kant: in past ages the moral subject could not fit with all her maxims "into a possible universal legislation"[727], thus Kant equipped the subject with a unique, supreme and very formal moral principle enabling her to examine her maxims and see whether they could potentially become universal *ethical laws*. Kant's ethical vocabulary is a pendant to his legal-theoretical vocabulary. Today, in the era of pluralism and diversity, a subject can easily find plenty of ethical laws and standards. In democratic cultures legislation corresponds to human autonomy and promotes the belief 'what is not prohibited is permitted'. This normative framework brings a release: one is not left to his or her own devices with one's own questionable maxims.

But will AI ever have sufficient access to ethical criteria for all the kinds of its actions, including "all the occurrences that might eventuate,"[728] as Kant puts it? Probably not. Human beings are in a similar situation. When facing novel or extremely challenging moral issues we all need principles which are "universal" in a way that allows us to apply them to various practical and, simultaneously, sociomoral contexts. In Kant's terms, it is "maxims" that articulate the purpose of intended actions and practices.

Hilary Putnam approached morality as a computational system of reasoning that is only possible for individuals. Kant's categorical imperative was originally too developed for individual use. Having reservations about the moral personhood (or moral agency) of AI, one may go beyond that distinction and, according to Jennifer Hornsby, suppose the impersonal status of AI: "From the *personal* point of view, an action is a person's doing something for a reason, and her doing it is found intelligible when we know the reason that led her to it. From the *impersonal* point of view, an action would be a link in a causal chain that could be viewed without paying any attention to people, the links being understood by reference to the world's causal working"[729]. There is nothing 'deterministic' or

726 I. Kant, *Groundwork for the Metaphysics of Morals*. p. 19.

727 I. Kant, *Groundwork for the Metaphysics of Morals*, p. 19.

728 I. Kant, *Groundwork for the Metaphysics of Morals*, p. 19.

729 Jennifer Hornsby, "Agency and causal explanation," in: Alfred L. Mele (Ed.), *The philosophy of action*. Oxford NY, Oxford University Press, 1997, p. 283.

'mechanical' in impersonal reasoning by following the categorical imperative as the core criterion of a maxim's moral legitimacy, providing this maxim with an obligatory claim. I would suggest Kant's categorical imperative procedure shows adequate transparency and objectivity to be applied by all kinds of individual agents in order to promote their ethical self-lawgiving. I can imagine an artificial intelligent agent applying it at least in an experimental context. I can imagine even more: namely, that, similarly to human individuals, such an individual artificial agent could become responsible for the broader social consequences of its activities as it conducts imperative-based reasoning. According to Kant, this reasoning must involve myself and other agents as *subjects* instead of objects (or any abstract entities). In all kinds of actions intended by myself I shall respect all agents which personify the ability to govern themselves in a reasonable and autonomous way, which is a synonym for their intrinsic and inalienable dignity, current or potential. In other words, I shall treat all these agents as subjects, persons, and "ends" in themselves (autotelic ends) and not as tools who can help me to achieve other goals, regardless of their nature. Such a "systematic union" of moral "lawgivers" regarded as autotelic ends is ruled by a universal moral principle and universalisable ethical laws as well. It is the preoriginal foundation of Kant's idea of the "Kingdom of Ends" whose core principle, embodied in all morally minded agents, at least potentially, says:

"Act only according to that maxim whereby you can at the same time will that it should become a universal law without contradiction."

There are several versions of the categorical imperative in Kant, some of them more formal and less complex than others. This, however, does not imply that cognitively less advanced agents would be able to apply a categorical imperative test in an automatically *tacit* way. At this point, I would disagree with Harold Stone's argument, according to which "for people to follow the rules of an algorithm, the rules must be formulated so that they can be followed in a robot-like manner, that is, without the need for thought"[730]. Nowadays, we are facing a novel AI generation, e.g., machines that have begun thinking, and – unfortunately – humans that have stopped thinking.

A further problem with AI´s ethical reasoning would be the matter of the "will" and the will itself. How can an artificial intelligent agent "will" a potentially universal state of affairs which is normative by its very nature? It can only

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730 Harold S. Stone, *Introduction to computer organization and data structures*, New York, McGraw-Hill, 1972; also Giulio Tononi, "Integrated Information Theory of Consciousness: An updated account," *Archives Italiennes de Biologie* 2012, vol. 150.

"will" something linked to the chain of its goals and purposes. Its "will" cannot be as intelligible and pure, e.g., oriented towards a moral duty as was postulated in Kant's philosophy. Thus, an artificial "will" needs to be replaced by a more formal term, e.g., another kind of causation than duty-based 'incentives', moral emotions, or even epistemic feelings. Such causation would originate from principles (or otherwise defined reasons) governing one's decision-making process. This resembles Donald Davidson's nomological approach to agency and action: "our justification for accepting a singular causal statement is that we have reason to believe an appropriate causal law exists"[731], Davidson states. "There must be a covering law," "though we do not know what it is,"[732] he continues. With regard to AI, to which an intuitionist approach does not apply, much more plausibility concerning moral instances as *governing laws, rules of grammar, logic,* etc. is expected. In other words, defining ethical procedures for AI, one cannot appeal either to the metaphysical attitudes of the AI nor to its 'intuition' or any deep-psychology related realities.

The next issue to consider would be a material determination of the maxim, e.g., the maxim's content made of situational contexts observed and learned by AI on its own[733]. According to Brian Tomasik, both kinds of problem should be considered (and maybe resolved) in the following way:

> "The categorical imperative makes most sense to me when interpreted through the lens of decision theory. In particular, compare Kant's formulation of the categorical imperative with this summary of timeless decision theory: Choose the output to your cognitive algorithm whereby you can at the same time will that it should become the universal output of all instances of that cognitive algorithm. This clears up the fuzziness about exactly what maxim our action is supposed to be following, since the 'maxim' is whatever algorithm we're executing when making a given decision. In fact, there are many

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731 Donald Davidson, *Essays on actions and events*, Oxford NY, Clarendon Press, 2001, p. 160.

732 D. Davidson, *Essays on actions and events*, p. 160.

733 This corresponds to, and simultaneously goes beyond the contemporary concept of algorithm: "AI algorithms are usually only programmed to provide an answer based on the data they've learned. That is, we can see their conclusions, but most of the time we don't know how they arrived at them. That limits our ability to improve AI when something goes wrong, as well as learn from them when they make a decision that wouldn't occur to us", Dave Gershgorn, "We don't understand how AI make most decisions, so now algorithms are explaining themselves," *Quartz* 2016, December 20 (retrieved from https://qz.com/865357/we-dont-understand-how-ai-make-most-decisions-so-now-algorithms-are-explaining-themselves/ on May 18, 2018).

algorithms that go into a given choice, so presumably we should act as though we're determining all of them at once. I don't know exactly how to make this work, but now we can see that it's just a technical problem in the realm of decision theory"[734].

Among various versions of the categorical imperative[735] there is one formula which focuses on the absolute respect for autonomy in all moral lawgivers. It seems to be useful for constructing an experimental ethical algorithm for AI. Similarly to its human users, such an algorithm could assist autonomous AI in demanding practical contexts where it has to make ethical decisions, but, at the same time, there is a lack of a superior normative criterion, a decisive rule, a standarized procedure, etc. or – alternatively – heterogeneous, conflicting norms handicap decision-making. There are controversial and dilemmatic issues, as yet unresolved problems, and novel challenges belonging to the practical contexts with such normative deficits. To construct a suitable model, several stages of algorithms would be essential:

(0) circumstances with respect to the practical context related algorithms able to detect, select, and qualify data (information) necessary to construct a descriptive (material) purpose of practical maxims;

(1) algorithms selecting morally relevant information in respect of the practical context;

(2) algorithms processing information in order to construct a maxim in a correct way;

(3) algorithms checking whether there is not a legitimate superior legislation, the main ethical context-related law/norm, and procedure to testify the maxim, and selecting out maxims testified by existing laws/norms (conclusion: maxims M^1 and M^2 are left for the categorical imperative procedure);

(4) algorithms operating the categorical imperative formula, such as for example 'Maxim M^1 is thinkable and – i.e., at least epistemologically correct – to become a rule acceptable to all autonomous agents including 'me', situated in analogous practical sociomoral contexts (conclusion: M^1 shall be observed at all analogous times regardless of alternatives, in Kant's terms – "pathological incentives").

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734 Brian Tomasik, "Interpreting the categorical imperative," 2015 (retrieved from http://briantomasik.com/interpreting-the-categorical-imperative/ on April 8, 2018).

735 The hypothetical imperative will not be considered here for it is combined with a consequentialist approach. Furthermore, the formula 'you shall do A to achieve B' would require an ethical (categorical imperative based) test of both elements separately; the aim as well as the tool.

(5) in particularly socially sensitive circumstances, the algorithms which detect all related autonomous subjects and define them in terms of autotelic "ends", including natural and artificial agents.

(6) algorithms responsible for consulting all related autonomous agents and asking for their acceptance, negotiating their participation or contribution when an intended action is cooperative in nature, or it must involve persons' "conscious consent" typical for medical contexts.

I do not insist on this simplified categorical imperative procedure to be the sole criterion for ethical decision-making in AI. I do not even insist that it should be prior to all other ethical and metaethical procedures of providing moral reasonings with some consistency and transparency to make morally relevant choices and decisions legitimate in a universal way, as was originally thought in Kant's ethics for autonomous human agents. Certainly, Kant´s conception and the simplified categorical imperative procedure are not equivalent in meaning, especially since here autonomy is disconnected from the metaphysical notion of "Humanity" as being absolutely valuable, i.e., "whose existence in itself had an absolute worth," and its implications limited to humanity (accordingly, in the thought experiment conducted here all the autonomous agents' existence remains absolutely valuable). I merely suggest that statistical, mathematical, analytical, utilitarian, consequentialist, altruistic, empathic, virtue, etc. -based decision procedures are as less efficient among human agents, let alone artificial ones.

5. "No One Really Knows How the Most Advanced Algorithms Do What They Do"[736]

Teaching machines how to apply the categorical imperative test may have important implications not only for numerous fields such as medical care, military, security, management and investment decision-making where people rely on artificial intelligence agents. As already mentioned above, controversial, dilemmatic and novel challenges belong to them. "As deep-learning algorithms begin to set our life insurance rates and predict when we'll die, many AI experts are calling for more accountability around why those algorithms make the decisions

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736 Will Knight, "The dark secret in the heart of AI. No one really knows how the most advanced algorithms do what they do. That could be a problem," *MIT Technology Review* 2017, April 11 (retrieved from https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/ on April 11, 2018).

they do. After all, if a self-driving car kills someone, we'd want to know what happened"[737].

   Risky developments involving decisions being made differently than human agents would make them could be prevented. Even algorithm and software developers only rarely understand how autonomous AI really processes its resolutions and reaches its conclusions, as Knight[738] stresses. Even less do we know about its ethical decision-making, including the question of whether it is integrated, hierarchical, etc., e.g., whether causal or logical interactions among always the same elements of the system occur, or whether they rather occur among alternative elements; or selected elements build lower and higher subsystems, as – hypothetically – a system of 'maxims' and a system of 'imperatives'; or whether a system of elements "generates a cause-effect information" which could be considered in moral terms[739]. For it shows that with regard to this secret attitude, an artificial mind resembles a "black box". Logical and deontological schemes such as the categorical imperative would enable humans to better track AI decision-making process and "to interrogate an AI system" (cf.) about its explanations, argumentations, and justifications in favor of or against a preferred conduct, especially in the face of novel and demanding contexts. Consequently, the reciprocal comprehension would also facilitate communication between natural and artificial intelligence and advances in the AI learning process as well. In this paper I argue in favor of understanding the complexity (and in favor of complexity as well) rather than in favor of the simplification of the AI's complexity in order to make it more transparent for human minds, for it would necessarily imply decreasing the benefits for humanity. I agree with Weinberger's argument:

> "Human-constructed models aim at reducing the variables to a set small enough for our Intellects to understand. Machine learning models can construct models that work (...) but that cannot be reduced enough for humans to understand or to explain them. This understandably concerns us. We think of these systems as making decisions, and we want to make sure they make the right moral decisions by doing what we do with humans: we ask for explanations that present the moral principles that were applied and the facts that led to them being applied that way. 'Why did you steal the apple?' can be justified and explained by saying 'Because it had been stolen from me,' 'It was poisoned

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737 Dave Gershgorn, "The case against understanding why AI makes decisions," *Quartz* 2018, January 31 (retrieved from https://qz.com/1192977/the-case-against-understanding-why-ai-makes-decisions/ on May 6, 2018).

738 W. Knight, "The dark secret in the heart of AI".

739 G. Tononi, "Integrated," p. 297.

and I didn't want anyone else to eat it' or 'Because I was hungry and I didn't have enough money to pay for it.' These explanations work by disputing the primacy of the principle that it's wrong to steal. It's thus natural for us to think about what principles we want to give our AI-based machines, and to puzzle through how they might be applied in particular cases. If you'd like to engage in these thought experiments, spend some time at MoralMachine.mit.edu where you'll be asked to make the sort of decision familiar from the Trolley Problem"[740],

but, not yet the sort of decision that is similar to the categorical imperative test. Currently, ethical algorithms are being developed and verified, in particular those concerning abduction. The latter can be defined as a "reasoning where one chooses from available hypotheses those that best explain the observed evidence, in some preferred sense"[741]. In the light of categorical imperative–based reasonings, the available maxims could be considered to finally choose that which most closely corresponds to a "preferred sense" expressed with the imperative. Pereira and Saptawijaya consider "representing moral facets by abduction" and "a priori integrity constraints (...) as a mechanism to generate immediate responses in deontological judgment"[742] as possible in AI. However, abductive reasoning based on the preferences applied in moral dilemmas advances mixed, e.g., the utilitarian and deontological ethics of AI at best. In so doing, researchers do not respect the a priori original meaning of the reasoning. Instead, they emphasize "the consequences of the considered abductibles have first to be computed, and only then are they evaluated to prefer the solution affording the greater good"[743]. As far as the categorical imperative procedure is concerned, the preference as well as the good are a priori well-known: it is all within moral agents' autonomy which potential conduct expressed with a maxim is to be validated as conforming to all the agents' autonomous self-governance or not. Further preferences, interests, goods, rights, etc. remain controlled by other kinds of procedure. I do not insist on the unlimited suitability of the categorical imperative. Other postconventional principles, such as the principle of not harming others, the Radbruch Formula, the respect and reciprocal recognition principle, the rule

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740 David Weinberger, "Optimization over explanation. Maximizing the benefits of machine learning without sacrificing its intelligence," *Berkman Klein Center for Internet Society at Harvard University* (retrieved from https://medium.com/berkman-klein-center/optimization-over-explanation-41ecb135763d on Februar 1, 2018).

741 Luis Moniz Pereira, Ari Saptawijaya, *Programming machine ethics*, Switzerland, Springer International Publishing, 2016, p. 35.

742 L. Moniz Pereira, A. Saptawijaya, *Programming machine ethics*, p. 35–38.

743 L. Moniz Pereira, A. Saptawijaya, *Programming machine ethics*, p. 38.

of constitution, etc., rather belong to the basic principles of fair and just conduct. Utilitarian procedures seem not to be a sufficient warranty of those qualities of conduct in both humans and AI. "In humans, the individual understanding that there exists a self in relation to others makes possible participation in moral community"[744]. Unlike in humans, such an advanced and interactive self-understanding cannot be expected in artificial agents as they are, and, will most probably remain "rather simple-minded agents"[745]. For this reason, sociomoral principles and meta-principles, such as for example the unconditional categorical imperative, would certainly minimize restrictions and the harm inflicted on human or animal beings by AI-made self-willed solutions and decisions. At the same time, the AI's autonomy could get some novel dimensions, very different from a "slavish conformity to ethical rules"[746], as explained in previous sections. It does not so much need sophisticated ethical theory produced over the millennia. It rather needs a trained ability to make decisions in manifold practical and social contexts, when service, social assistance, companionship, and other relations with humans come into play.

According to Kant, the categorical imperative was thought to be supportive for those agents who face sociomorally relevant choices in contexts lacking normative guidance or ruled by unjust institutions. It also was thought to disclose, track and self-examine normative reasonings carried out by autonomously minded moral agents. Most probably, it was also supposed to be the most rational stage in humanity´s moral development. The main practical principle provides an agent with her own, autonomous and universally applicable deontological tool. In Kant, the procedure to examine own moral reasonings, called *conscientia*, also relies on the same deontological tool.

Designing autonomous AI nowadays, human agents try hard to instill principled self-determination into artificial agents. But sharing human autonomy with human-like agents results in challenges. They sometimes resemble interhuman challenges, such as for example trust and reliance on others. In fact, humans design autonomous AI in their own image to stay in relations with them. Humans stay in relations with others not just because the latter are autonomous, but able to control their activities within relationships. This kind of self-control implies respect and minimizes the risk. Otherwise, humans would not be able to trust

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744 L. Moniz Pereira, A. Saptawijaya, *Programming machine ethics*, p. 163.
745 L. Moniz Pereira, A. Saptawijaya, *Programming machine ethics*, p. 164.
746 Paula Boddington, *Towards a code of ethics for artificial intelligence*, Springer International Publishing, 2017, p. 55.

their fellow humanoids as they do so with their fellow humans. Contemporary ethics often resists "Kantian attempts" to make social interrelations "a matter mainly of justifying universal principles for ideal rational agents"[747] whose observable performance would visualize at least the conclusions of their cognitive operations. According to Couzens Hoy, it also objects "to Hegelian attempts to assimilate otherness and to see the other as the mirror of the self"[748]. Perception seems to be the key concept in contemporary cognitive sciences and, most probably, it is an immediate communication tool between human and non-human agents including animals and intelligent devices. The verb *observe the rule* seems to link perceptual ability with intelligible apperception and following the norms together. "The key PCT contribution (...) is that human or animal organism controls neither its own behavior, nor external environmental variables, but rather *its own perceptions* (...) This fundamentally contradicts the classical notion of linear causation of behavior by stimuli (...) mediated by intervening cognitive processes"[749]. Tracking our own perceptions and other kinds of experiential and cognitive processes was already paradigmatic for transcendental philosophy ("Experience is cognition through connected perceptions", as Kant puts it in his first *Critique*). Transcendentalism questioned the mind-independent universe, in particular the moral universe, and explored all necessary preconditions of our cognitive access to it instead. It also revealed a unique, formal principle issued by practical reason, observable for all intelligent agents. This principle provides our motives and intentions expressed in "maxims" with at least potential shareable validity. Those intentions are strong enough to empower us as being cohabitants and fellow human beings to exercise our freedom, and thus our free will, in the real world.

However, unlike in human beings, "one 'special property' some believe is not to be found in any computational technology yet developed is free will. Conscious understanding is another."[750] Free will according to Kant is oriented towards the *normative meaning* of ethical and legal rules successfully examined by the

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747 David Couzens Hoy, *Critical resistance. From poststructuralism to post-critique*. Cambridge, Mass., London, The MIT Press, 2005, p. 164 (despite the author's misinterpretation of Hegel's practical philosophy).

748 D. Couzens Hoy, *Critical resistance*, p. 164.

749 Vladimir G. Ivancevic, Darryn J. Reid, Michael J. Pilling, *Mathematics of autonomy. Mathematical methods for cyber-physical-cognitive systems*, New Jersey, World Scientific, 2017, p. 128

750 C. Allen, W. Wallach, *Moral machines. Teaching robots right from wrong*, p. 59.

categorical imperative test, and conceptualised to provide its user with their independent moral self-governance by legible and legitime practical rules within all sociomoral environments, even highly complex ones. Observing such a rule may be regarded as following an incentive (*unmittelbarer Bestimmungsgrund*), following a cognitive representation, or providing one's real judgment or decision with a reason based on a corresponding rule (*Vorstellung des Gesetzes*). Still, an autonomous lawgiver and a real autonomous agent (decision maker and action performer) are not the same.

An intelligible self-obligation (*Achtung*) and the will freely subordinating its autonomously given rule cannot be expected in AI's cognitive patterns even when they mirror the human ones. What is 'intelligible' in Kant cannot be reduced to mentalism or cognitivism, despite Davidson's efforts to explain transcendental activities in terms of "mental and nomological"[751] ones. "Consider, for example, Kant's contention that will and autonomy are necessary for an entity to be a moral agent. The ability to function as an autonomous being, or the capacity to will, suggest faculties beyond pure reason. However, little is understood regarding the manner in which the Kantian will and autonomy are supported by and emerge from the capacity to reason and other cognitive mechanisms"[752].

To stress one more time: observing practical rules given in an autonomous way which is imaginable for human as well as for artificial minds does not occur in a causal or deterministic way. Although, here we have to take note of the important distinction between rational procedures on the one hand and cognitive mechanisms on the other, both levels are considered to be "autonomous" by Kant[753]. A cognitive and rational moral agent deliberately *decides* to *act* in accordance (or discordance) to a rule, or other explicit normative criterion. Moreover, a mental moral agent feels obliged to follow it due to the rule´s imperative nature. Such an irreducible, metaphysical, intelligible self-commitment cannot be expected either in a cognitive system, be it natural or artificial. Here observing practical rules and acting accordingly may occur spontaneously, automatically and inexplicably. Both kinds of agents seem to make principled moral judgments and decisions; both of them make them every time *de novo*. None of them represents an autopilot-, routine-, and robotic-like rule-following mode.

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751 Donald Davidson, "Mental events," *Philosophy of Psychology* 1970, pp. 208–225.

752 W. Wallach, "Robot minds and human ethics," pp. 245–246.

753 And maybe also by Wittgenstein. Though their concepts of cognition and cognitive process are different: Kant's concept refers to an embodied, while Wittgenstein's to a disembodied cognitive 'subject'.

The latter seems to be the most pragmatic and provident, but, in fact, it does not match the requirements of *autonomy* as a key attitude of the moral lawgiving subject and the 'inter-subject' constructed by Kant and forming the core foundation of moral sociability and society which could involve non-human intelligent beings.

We do not find our alter egos in those beings nor do we share essential *intelligible* faculties and principles funding the very reciprocity between us and them. Nonetheless, like Wittgenstein who was also advocating for the detranscendentalisation of rule making and rule following, we no longer need such foundations and explanations, but instead, a "*training* – comparable with the training you would give an animal"[754] and, vice versa, you would take of an animal just to create a novel kind of sociability, cooperation and community with them.

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754 Rush Rees, Preface to Ludwig Wittgenstein's *Preliminary studies for the "Philosophical Investigations" generally known as The Blue and Brown Books*, New York, Harper & Row Publishers, 1978 (1st ed. 1958).

Summary

Radical technopoiesis may have an ambiguous impact on individual self-identities and interindividual relations, and practices as well. This impact has hitherto been underexamined when compared to that of technopoiesis, in reflections on the global condition of humankind and the future of human nature. Even the polysemy of the term 'posthumanism' or 'transhumanism' indicates a specter of global and impersonal issues, rather than a specter of problems of individual subjects affected by (auto)technopoiesis and its consequences for their self-identities.

The scope of the project reported in this book was different. Paraphrasing the title of Anthony Giddens' work *Modernity and Self-identity*, the thematic issue as *technopoiesis and self-identity*. We are surrounded and affected by the technosphere and it is assumed that we embody a need to be a self and to have an identity – instead of existing 'beyond' our self and changing into a 'post-self' or 'post-person', as both the supporters and the opponents of the *posthumanist turn* put it.

No one is able to entirely determine and create their own self-identity, though many try to do so through the use of narrative tools. Once Soren Kierkegaard said, "Most men live in relation to their own self as if they were constantly out, never at home". Constantly facing such homelessness and disharmony with regard to oneself can be a chronic problem in the age of the radical impact of technologies on subjects. However, according to Robert Kegan, "there is no progression without contraries".

Inspired by Kegan, Waldenfels, and Dąbrowski, in this book I advocated for a self-identity which would achieve "the next balance" and "the next equilibrium", if the crisis caused by technologies radically changing our bodily and mental features is actively dealt with. But transforming disintegration to reintegration and disequilibrium to equilibrium may be challenging and need the support offered by professional psychotherapy. As long as the ability and willingness to reintegrate one's self is observed – a recovery process and even a growth of self-identity is possible. This process can be considered as self-immunization against radical posthumanism, which no longer seems to be interested in a consistent, diachronic self-identity. Indeed, the opposite is happening: by weakening the criteria suitable for defining the human self, posthumanism coincides with a skeptical view of 'psychological connectedness': "since connectedness is a matter of degree, we cannot plausibly define precisely what counts as enough"[756],

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756 D. Parfit, *Reasons and persons*, p. 206.

as Derek Parfit claims. Psychological disconnectedness (including "a series of interrelated physical and mental events"[757]) provides a favorable opportunity for light-heartedly proclaimed posthumanist experience to initiate the next stage of (post)human development – but first of all, to initiate a permanent self-identity crisis in human beings and in related research as well. Still, "I am not a series of experiences, but the person who *has* these experiences"[758]. How can I continue existing as a person while becoming a 'post-person', as posthumanism asserts?

A single type of self-identity always remains an ideal model, a heuristic fiction. In this book the core types of the self were revisited and discussed in the light of experiences radically challenging the invisible subject of them, as something that perceives, experiences, thinks, suffers, acts and interacts. These were: 1. the narrative (diachronic) self, 2. the episodic self, 3. the embodied self, and 4. the agential (energetic) self vs. a *patient*-like 'me'. The analyses often confronted those selves with realistic, technologically triggered interventions; three cases were drawn from the literary imaginary of 20th and 21st centuries to prove radical posthumanist projects as illusory and not manageable for a human being.

Other ways in which radical technological and biotechnological interventions' have effects on one's self-identity were illustrated by examples related to facial allografts and bionics. Considered in line with the post-dualist, psycho-somatic, embodied self-based approach, such interventions deeply revise an individual self and identity. They may disturb both proprioception and the perception responsible for body representations, and cause dissociation, existential crisis, etc.; and they may distort a subject's sense of her autonomous and authentic conduct. Nevertheless, even such a radical crisis can elevate persons' self-identity to the "next balance", as was shown in Chapters III and IV. These therapeutic self- and identity-advances should not be assigned to the category of *posthumanism*; the same applies to the bionic athletes celebrated as "post-human" or "super-human". Evaluating the effects of technopoietic surgery, which makes the borderline between my body and environment (as the borderline traditionally associated with our skin) liquid, was not aimed at banning technologies, and neither was it about taking the position of the techno-enthusiast, because it is not technologies that are ambiguous; it is the use of them which can be ambiguous. Here their ambiguous nature was discussed in regard to a persons' self-identity and the permanent crisis associated with it – caused, supported and celebrated by the enthusiasts of radical posthumanism.

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757 D. Parfit, *Reasons and persons*, p. 211.
758 D. Parfit, *Reasons and persons*, p. 223.

Although scholars representing wide, multidisciplinary (or – to apply a more fitting word – postdiscisciplinary) area of research have for a long time considered types and changes of self-identity, including modern and postmodern (be it Locke, Reid, Giddens, Bauman), they cannot predetermine what type matches a contemporary subject's needs and beliefs, and to what context it applies. As nowadays psychologists and philosophers of mind tend to claim mental representations of oneself relate to the states of one's embodied and extended mind, this aspect of self-identity was a core issue in this book. On the other hand, "bodies do not generate or tell any narratives of their own"[759], thus, narrating the problems emerged from the usage of new technologies would remain a complementary priority if we are interested in voicing those problems and dealing with them. Showing its limitations (also mentioned in this book), the narrative approach can be complemented by a dialogical-therapeutic approach to the self (Chapter V). There can be no universally applicable, eclectic model of self-identity diagnosed or recommended for persons confronted with advanced technologies. There can only be the use of complementary strategies giving structure, strength, sense, diachrony, "shape and coherence"[760] to the experience and recognition of ourselves as users of technologies. That is, often as both their beneficiaries and victims at the same time.

Over the course of the six chapters, I have argued that our organisms and bodies – not only our pure cognition – have powerful means for dealing with invasive environmental and technological factors, and to be an 'intelligent' part of natural interrelations with their environments. The new environmentalism (which also takes a moderate posthumanist form) recalls the phenomenological concept supported by Hans Jonas and Maurice Merleau-Ponty. The limitations of being open to our animal 'past' were illustrated with Kafka, Bulgakhov and Brown's novels in Chapter I (*Kinds of the Self*) to show how destructive replacing a human self-identity with a non-human identity would be. Rather, a radical posthumanist evolution would not imply "transcending our natural confines" (Bostrom) and achieving an enhanced version of ourselves.

In Chapter II (*The Evolution of Body Concept*) nine body concepts were constructed and check-listed, from the basic to the most complex, and their identities were defined with the focus on allograft reception, bionic prosthetics,

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759 S. Gallagher, D. D. Hutto, "What's the story with body narratives? Philosophical therapy for therapeutic practice".

760 Catriona Mackenzie, „Bare personhood? Velleman on selfhood," *Philosophical Explorations* 2007, vol. 10, no. 3, pp. 268–269.

somaesthetics, new media, etc. In fact, according to the invented ontologies, technologies and interpretation schemes (humanist, posthumanist and posthumanism-critical), the human embodiment seems to evolve, however, more often it would be a body concept and theorization that evolve across disciplines and explorative or experimental practices, including somaesthetics, new media and new special locations of the body.

In Chapter III (*Body Representationism between Permanent Loss and Recovery of Identity*) body image and body schema (i.e., perception- and proprioception-based body representations) were analysed, due to their plasticity as an intelligent (cognitive) response to one's own body's morphological dynamics, including the dysmorphic body and prosthetic body. Plasticity is one of the core mechanisms protecting the embodied subject against body-mind disintegration. However, one's own body image is highly prone to sociocultural manipulations. Drawing on Aristotle's physiognomics, Arnold Gehlen's conception of functional plasticity, Hans Jonas' conception of *Homo Pictor,* and cutting edge philosophy of mind, plasticity was defended as our human strength when our bodies confront radical changes. Also, the bio-scientific and social limits of bodily integrity were discussed here. In the same chapter people's attitudes towards artificial devices, human and posthuman identities in several different countries (N=199) were reported to document social body imagery across cultures (especially in China, Egypt, Lithuania and Poland). For example, 18.59% interviewees considered artificial intelligent technologies to provide individuals with additional 'superhuman' potentials or qualities, much less than expected. For 50.25%, artificial devices contributed to a variety of individual potentials, and for 31.15% all human beings have the same innate potentials. Furthermore, as the same pilot survey revealed, 65.2% of Chinese interviewees and 37% of Polish interviewees would define the crosscorporeal identity as 'posthuman', which is a higher percentage that other participants. Lithuanian (70%) and Egyptian (87.8%) interviewees indicated artificial devices and the human bodily identity to comprise an integral whole. Still, for 20.6% of interviewees, artificial devices and technologies belong to the 'alien' area.

In Chapter IV (*Psychosurgery. The Self As a Chronic Patient*), the pharmaceutical technologies of psycho-surgery and neuroenhancement were described, with the focus on their effects on subjects' autonomy and authenticity which are essential for self-identity, including moral decision making and moral behaviour. They were discussed from the viewpoint of controversial therapeutic stimulations whose outcomes aim at adapting subjects to social standards and conventions. In the same chapter, the episodic self-identify was revisited and examined for the second time (Chapter I recapitulated, among others, the Dennett vs. Ricoeur

discussion) to defend subjects' right not to narrate their autobiographies in order to prove that they have self-identity. Nor must they be pressed (biochemically or with the use of further clinical tools) to harmonize with experiences and factors that are foreign to them. The chapter finishes with Bernhard Waldenfels' phenomenological phrase "... that the self is not at home, but is estranged from itself (*ausser sich ist*)", which also belongs to our human (and not necessarily posthuman) experience.

Chapter V (*Empowering the Agent, Not the Patient. Gadamer, Kępiński, Dąbrowski and Waldenfels vs. Technopoiesis*) was conceptualized to synthetize four compatible approaches to the concept of dialogical autotherapy rooted in phenomenological and hermeneutical psychology, and the agent-centered concept of the self as well. Strengthening the agential potentials of the 'agent' would protect the self against being reduced to the *patient.* Whereas the conventional *ars medicinalis* already treats subjects as 'patients' and demonstrates its technological advantages over them, post-conventional autotherapy would try to re-empower a patient's agential potentials. Dąbrowski's and Kępiński's models of positive disintegration have their corresponding models in Kegan and Erikson, but they deserved an update. Hence, they were chosen as leitmotifs for the whole Chapter V. Gadamer's and Waldenfels' compatible phenomenological approaches to the subjectivity crisis and autotherapy followed. All four contributions created a powerful counterbalance to both technopoiesis and the progressive dehumanization and post-humanization of therapy itself.

Chapter VI (*Artificial Intelligent Devices To Be Our Alter Egos? Facing Humans' Most Distant Relatives*) was constructed as a *Gedankenexperiment* in which the social AI's autonomy was hypothetically extended by means of Kant's categorical imperative. The lawgiving procedure based on the categorical imperative was traditionally regarded as essential for being an autonomous moral self and, at the same time, for being an equal participant of interindividual relations. Hence providing the AI with Kantian ethics was mostly considered for social robots, i.e., making them worthy of participation in essentially human forms of sociality and social life. Robots able to respect human autonomy seem to be desirable partners of interactions and cooperation with humans. If a subject's freedom interacts with another subject's freedom, constraint, instrumentalization, domination, etc. can be replaced by reciprocity. But such a radically moral AI is impossible to design by means of technologies, as it is impossible to create a complex system of autonomous lawgiving able to universalize its maxims at the level of the hypothetical "als ob" (*as if*), which requires a reciprocal agreement anticipated by an intelligent individual. Regarding the social and transcendental requirements necessary for conducting the categorical imperative procedure (and to justify its

sense) as well as probably all the requirements which apply to an autonomous and principled moral judgment, one should use expressions such as *autonomous*, *social*, and *moral* artificial intelligence with great care and reduce human expectations concerning reciprocity and post- or transhuman fellowship and unity with it.

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