## Somaesthetics and Embodied/ Enactive Philosophies of Mind

## Stefano Marino

In this article I focus on Jerold J. Abrams' recently edited volume on Richard Shusterman's somaesthetics and I assume as a starting point the concept itself of soma, widely cited and examined in various contributions collected in Abrams' book. Then, I specifically concentrate my attention on one of the essays, the one authored by Stefán Snævarr, which connects in an interesting, original and sometimes also challenging way Shusterman's thinking to some questions that have characterized the current debates in the field of the philosophy of mind. On this basis, in the final part of my short essay I try to offer some provisional remarks on the potential and mutually enriching dialogue between Shusterman's somaesthetics and embodied, extended and enactive approaches to perception and mind, such as those, for example, of contemporary theorists like Andy Clark, Shaun Gallagher and Alva Noë. | Keywords: Somaesthetics, Philosophy of Mind, Embodiment, Extended Mind, Enactivism

1.

Jerold J. Abrams's edited volume *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art*, recently published in the Brill series 'Studies in Somaesthetics,' aims (and, in my opinion, definitely succeeds) to offer a broad overview and a detailed interpretation of Richard Shusterman's decades-long, thematically wide and pluralist, and quite often theoretically challenging, philosophical path. Abram's volume is divided in two main parts, including contributions by various authors. The essays that form the first part of Abrams' book are focused on the tight relation between pragmatism and somaesthetics, on some of the main topics addressed by Shustermans in his writings, and also on the relation of somaesthetics with other forms of contemporary aesthetic debate. The essays collected in the second part of Abrams' book, instead, are focused on the role played by the component of performance in Shusterman's philosophical work, with a special attention paid to his recent "adventures" in the field of performance art through the figure – or, say, the *alter ego* of Shusterman, his *Doppelgänger* –



of the 'Man in Gold'. After the aforementioned two main parts, Abrams' book also includes a third part, significantly entitled 'Shusterman in His Own Words,' which includes some comments by Shusterman on the various papers collected in the previous two parts of the book and finally an interview with Shusterman realized by Yanping Gao in 2020.

As noted by Abrams in his 'Introduction' to the book (2022, pp. 1-13), the overall development of Shusterman's path of thinking throughout the decades can be probably divided into three main phases, corresponding to Shusterman's early work in the field of analytic philosophy, then his turn to pragmatism, and finally his "foundation" of somaesthetics, a new disciplinary (and, indeed, interdisciplinary) proposal that is strongly rooted in the pragmatist tradition but also open to other approaches. As the name itself of this disciplinary proposal reveals, somaesthetics is a philosophical approach specifically dedicated to the theoretical and practical investigation of the soma: more precisely, it is "[a]n ameliorative discipline of both theory and practice" (Shusterman, 2000a, p. 101) that must be understood as "the critical study and meliorative cultivation of the body as the site not only of experienced subjectivity and sensory appreciation (aesthesis) that guides our action and performance but also of our creative self-fashioning through the ways we use, groom, and adorn our physical bodies to express our values and stylize ourselves" (Shusterman, 2019, p. 15). As an "interdisciplinary field of research, rooted in philosophical theory, but offering an integrative conceptual framework and a menu of methodologies not only for better understanding our somatic experience, but also for improving the quality of our bodily perception, performance, and presentation," it is possible to distinguish three main branches of somaesthetics ("that overlap to some extent," though): analytic, pragmatic, and practical somaesthetics (Shusterman, 2017, pp. 101– 102).

Now, although the philosophical theories developed by Shusterman – and also by the various authors who have worked in the field of somaesthetics in the last decades, contributing to its growth, articulation, ramification, and dissemination – are undoubtedly rich of many concepts, insights and ideas, it is nevertheless clear that one concept has played the fundamental role in the development of somaesthetics from the late 1990s until today: the concept of soma. In fact, as has been noted, Shusterman puts "the soma at the center of philosophical research" (Kremer, 2022, p. 54). Combining and, so to speak, remixing in a very original way the diverse influences deriving from authors such as Dewey, Merleau-Ponty, de Beauvoir, Plessner, Foucault and other authors, but also from "ancient Asian wisdom [that] privileges embodiment" (Ibidem, p. 50), Shusterman defines the soma as "the sentient purposive body," conceived as "both subject and object in the world," breeding the insight that "[o]ur experience and behavior are far less genetically hardwired than in other animals" and revealing that "human nature is always more than merely natural but instead deeply shaped by culture" (Shusterman, 2019, pp. 14–15). In a very stimulating way for the further development of my thoughts in the present paper, Shusterman also defines the soma as "the bodymind whose union is an ontological given" (Shusterman, 2007, p. 149; cit. in Bukdahl, 2022, p. 178).

2.

The question concerning the understanding of the soma is a question that, not by chance, emerges in various contributions included in Abrams' edited volume. In this context, it is of particular importance the question concerning the relation between the body, the mind, and our natural *and* cultural environment – a relation that we can understand as characteristic and, in a sense, "foundational" of our consciousness and experience of ourselves and the world. So, for example, Leszek Koczanowicz (2022, p. 70) argues that "the more we concentrate on the body, the more we realize that the body cannot be considered apart from the environmental contexts, both natural and social, in which it develops and progresses," while Alexander Kremer (2022, p. 55), referring to "the ongoing body-mind debate" in contemporary philosophy, hints at Shusterman's "emergentist standpoint" about "the living soma." However, it is particularly in the first chapter of the book, authored by Stefán Snævarr, that the aforementioned questions are addressed in a specific, detailed and also challenging way.

Snævarr begins with "an outline of Shusterman's thinking concerning the body and the self," defining him as "a somatist," namely a philosopher "who thinks that the sentient body is primordial to consciousness and constitutes the ground of our coping with, and cognition of, the world." As Snævarr explains, "[w]hile many materialists tend to focus on the inside of the body, and especially on the brain and the nervous system, somatists tend to be more interested in the outside of the body, not least the limbs, and the way in which the sentient body as a whole interacts with its environment" (Snævarr, 2022, p. 23). In the first sections of his contribution Snævarr carefully examines the relation between Shusterman's concept of soma, the phenomenological notions of Körper and Leib, the Dewevan concept of the body-mind, and the idea of the aesthetic self, also inspired by thinkers such as Nietzsche and Foucault. Then, in the subsequent sections, Snævarr claims that Shusterman's theories, although "certainly interesting and thought provoking," "are not without concerns," and he consequently discusses these concerns that regard some "possible inconsistencies," some "question[s] of empirical science" and philosophy of mind, and finally some "ontological issues" (Ibidem, p. 34).

In the thirteenth chapter of Abrams' book, entitled 'Somaesthetics, Pragmatism, and the Man in Gold: Remarks on the Preceding Chapters', Shusterman offers some comments on the twelve chapters included in the first and second part of the book, and he also replies to certain objections and critiques raised in a few chapters – most notably, in Tonino Griffero's essay on the relation between somaesthetics and neo-phenomenological "pathic aesthetics" (see Griffero, 2022) and precisely in Snævarr's essay. In this context, Shusterman especially responds to "Snævarr's charges of inconsistency with respect to essentialism and dualism," providing a clear

explanation of the way in which he, as a pragmatist philosopher, despite his skepticism towards "[the] concept of essential [belonging] to the fixed, foundational ontology that pragmatism rejects," nevertheless legitimately uses the term "essential" in his writings with a more ordinary and practical meaning, hence without falling back into any form of essentialism (Shusterman, 2022, pp. 245–246). Replying to some of the concerns emphasized by Snævarr, Shusterman also provides an explanation of his understanding of the relation between the concepts of soma, *Körper* and *Leib*. For him, "the soma is not a dualist combination of *Leib* and *Körper* but a single entity that, in different circumstances and from different perspectives, exhibits capacities that phenomenologists have divided between those German concepts" (*Ibidem*), and according to Shusterman this prevents somaesthetics from falling back into any form of dualism.

In the present contribution, also due to the limits of space of a short essay (which obviously imply, among other things, also limits in terms of possibility to discuss all the interesting questions disclosed by the essays collected in Abrams' book and Shusterman's replies), I will not focus my attention on the aforementioned issue of essentialism raised by Snævarr. I will not even concentrate, for example, on another stimulating question emphasized by Snævarr in his critical essay, namely the question concerning the existence or not of free will - with special reference to "the research conducted by Benjamin Libet [that] points in the direction of our motor actions being dependent on neurological events, which take place about 350 milliseconds before our conscious awareness of deciding to make a movement" (Snævarr, 2022, p. 30) – and its implications for a philosophy like somaesthetics. Rather, I would like to briefly refer to other intriguing passages of Snævarr's essay, like those that cite the different philosophies of mind of theorists such as Patricia and Paul Churchland ("the best-known proponents of eliminative materialism," who explicitly "deny the existence of consciousness, mind, and self": Ibidem, p. 37), Alvin Plantinga (whose immaterialism, vice-versa, powerfully claims that the self exists and "is an immaterial, noncomposite whole": Ibidem, p. 38), and Kristján Kristjánsson (who advocates instead "a soft realism concerning the self": Ibidem, p. 40). I would like to take Snævarr's essay as a point of departure and, so to speak, as a source of inspiration to ask the question about the potential connections between Shusterman's somaesthetic paradigm and some recent models that have emerged in the field of the philosophy of mind strictly understood, i.e. understood as a specific field of contemporary philosophical research, quite often intersected with research in psychology, cognitive science, neuroscience, AI, and so on.

3.

In his unfinished and posthumously published *Aesthetic Theory*, written in the 1960s, Theodor W. Adorno famously emphasized the importance of so-called "isms" in the context of 20<sup>th</sup>-century avant-garde art (impressionism, expressionism, surrealism, dadaism, suprematism, cubism, etc.), defending the necessity of "isms" as "secularization of [...] schools in an age that

destroyed them as traditionalistic" (Adorno, 2004, p. 25). With all due respect to the differences between the philosophy of art and the philosophy of mind, it is anyway interesting to underline that, as has been noted by the Italian philosopher Michele Di Francesco, also the philosophy of mind requires to "orient oneself in the forest of 'isms'" that have characterized this field in the 20<sup>th</sup> century: cognitivism, connectionism, functionalism, monism, dualism, materialism, immaterialism, psycho-physical parallelism, epiphenomenalism, reductionism, eliminativism, and so on (Di Francesco, 2003, pp. 17, 19, 21, 27). Beside all the "isms" listed in Di Francesco's comprehensive and useful catalogue of the different paradigms of philosophy of mind emerged in the 20<sup>th</sup> century, looking at some important debates of the last decades it is perhaps possible to add to the list other recent tendencies, such as, among others, internalism, externalism, and enactivism.

At a general level, internalism can be defined as "the view that a subject's beliefs and experiences are wholly constituted by what goes on inside the mind of that subject," so that, according to this view, "mental states depend for their content upon nothing external to the subject whose states they are, i.e. the mind is taken to have the referential powers it has quite independently of how the world is"; vice-versa, for externalism "mental states are externally individuated. [...] [O]ur experience depends upon factors that are external to the subject possessing the mental states in question" (Gallagher and Zahavi, 2008, pp. 121–122). Quite typically, externalists like Putnam, McDowell or McCulloch have argued that "meanings 'just ain't in the head' [and] neither is the mind," because, if "both mind and meaning are taken to be environmentally embedded," then "there is nothing mysterious in ascribing an intrinsic referentiality or world-directedness to the mind. [...] The subjective is not inside the mind and the objective is not *outside* of it" (*Ibidem*, p. 123).

Of course, as Gallagher and Zahavi rightly point out, it is also important to remember that internalism and externalism "are umbrella terms," and so it is "not enough to ask in general whether somebody is an internalist or an externalist": in fact, the answer to such a question "will depend on the specific kind of internalism or externalism one has in mind" (*Ibidem*, p. 121). Quite evidently, this determines a further proliferation of "isms" in this field, i.e. an increase in the internal differentiations and ramifications within the various approaches. Limiting myself to just one (famous) example, it is thus interesting to observe that Andy Clark and David Chalmers, in their influential article 'The Extended Mind,' in providing their original answer to the fundamental question "Where does the mind stop and the rest of the world begin?" explicitly suggest to differentiate what they call "the passive externalism of Putnam and Burge" from their own theoretical proposal, emphatically defined as "an active externalism, based on the active role of the environment in driving cognitive processes" (Clark and Chalmers, 1998, pp. 7, 9) and in constituting the mental states of human agents that are "spread into the world" (*Ibidem*, p. 18). From Clark's and Chalmers' perspective, at least "[a] part of the world is (so we claim) part of the cognitive process. Cognitive

processes ain't (all) in the head! [...] [T]he mind extends into the world. [...] Does the extended mind imply an extended self? It seems so. [...] [O]nce the hegemony of skin and skull is usurped, we may be able to see ourselves more truly as creatures of the world" (*Ibidem*, pp. 8, 12, 18), in comparison to other particular, in comparison to "intellectualist perspectives – in conception[s]" (Noë, 2009, p. 98) that, freely using an intriguing expression coined by Shusterman in a different context, rather seem to suggest an image of the human beings as "disembodied talking heads" (Shusterman, 2000b, p. 129). In this context, it is surely important to mention also enactivism, a recent approach that I had briefly cited in the previous paragraph and that has been defined as "one version of recently developed embodied approaches to cognition" that offers "an approach that is more informed by phenomenology and pragmatism than other versions of embodied cognition, such as the extended mind hypothesis [...], and more radical than the kind of 'moderate' [...] or 'weak' [...] embodied cognition found in theorists who locate the body 'in the brain'" (Gallagher and Bower, 2014, p. 232). Enactivist philosophers of perception and mind like Alva Noë, for instance, have argued that "to understand consciousness [...] we need to look at a larger system of which the brain is only one element." For Noë, "[i]t could even turn out that consciousness depends on interactions between the brain and the body and bits of the world nearby. [...] The problem of consciousness, then, is none other than the problem of life. [...] Mind is life. [...] The conscious mind is not inside us; it is, it would be better to say, a kind of active attunement to the world, an achieved integration" (Noë, 2009, pp. 10, 13, 41, 142; my emphasis).

4.

Now, there have been various attempts in recent philosophical scholarship to fruitfully connect aesthetics and the philosophy of mind, especially since the development in the last decades of various critiques of the traditional "denial of the cognitive significance of the body" and, consequently, of "disembodied view[s] on the mind," in favor of more embodied (or, as we have seen, even more extended) conceptions, according to which the body "structures our experience," "shapes our primary way of being-in-the-world," "is integrated with the world," and contributes to "our form of embodied life as it exists for us" (Gallagher and Zahavi, 2008, pp. 131, 137, 141). Among these attempts, making quickly reference to contemporary Italian debates that are particularly familiar to me because of my background, I would like to cite here the theories developed by philosophers working in aesthetics and the philosophy of mind like Fabrizio Desideri (2011) and Giovanni Matteucci (2019). The latter, in particular, explicitly relies on the aforementioned ideas of the extended mind and enactive perception to outline a general conception of human nature grounded on the aesthetic dimension, and Matteucci's book Estetica e natura umana has also been the object of a symposium on the international journal of phenomenology and hermeneutics Meta which included questions, among others, by Gallagher and Shusterman (see Iannilli and Marino (2020)).<sup>1</sup>

On this basis, returning now to some of the insights stimulated by Snævarr's essay, we can ask the question if it is possible to establish a connection between somaesthetics and the philosophy of mind, and, in this case, what kind of philosophy of mind can be coherently connected to Shusterman's thinking. As Shusterman explains in his short but dense article 'What Pragmatism Means to Me' (widely cited and commented in Kremer's essay included in Abrams' book), pragmatism and somaesthetics definitely favor "an essentially embodied view of human nature," rejecting "the traditional radical dualism of body/mind. [...] Pragmatist naturalism," as he observes, "is not aimed to reduce mental phenomena to mere neuronal reactions in the brain [...]. Mind is not an isolated psychic substance but rather incorporates energies and elements from the natural and social environments. In the full-blown human sense, the mind is essentially social and reflects a network of communication and meanings enabled by language. The embodied nature of mind is reflected in the importance that pragmatism gives to habit, which is shaped by and incorporates elements from both the and social environment to guide human thought action" (Shusterman, 2010, pp. 61-62). In my opinion, such statements by Shusterman suggest that the potential connection between embodied/enactive approaches and a form of thinking like somaesthetics is a promising and fruitful one.

Among Shusterman's main works, I think that it is especially in his book *Body* Consciousness that one can find various stimulating passages that may be fruitful to establish a potential dialogue between somaesthetics and contemporary embodied/enactive approaches to perception and mind. Here, Shusterman repeatedly claims that the soma's "embodied intentionality contradicts the body/mind dichotomy" (Shusterman, 2008, p. 1) and that somaesthetic theory and practice undoubtedly lead to reject "the old rigid dualism of mind and body" and, more generally, all the "false dichotomies of mind/body, subject/object, self/world, activity/passivity" (*Ibidem*, pp. 52, 98). As he explains, "[s]omaesthetic disciplines can give us [...] a heightened experiential awareness of the impure mixture of our bodily constitution and remind us that our body boundaries are never absolute but rather porous" (*Ibidem*, pp. 131-132). What we can observe here is an extended conception of the body that can be profitably connected to the aforementioned extended conceptions of the mind that stress the importance to take into examination the relation between the brain, the body, and the environment in its entirety.<sup>2</sup> For Shusterman, the main roots of somaesthetics notwithstanding the importance of its interdisciplinary and intercultural

In a recent interview on the *European Journal of Pragmatism and American Philosophy* Gallagher has stressed the positive role that pragmatism, beside phenomenology, has played in paving the way to the development of recent embodied/enactive approaches to perception and mind, also emphasizing some possible connections between aesthetics and embodied/enactive philosophies of mind, for example with regard to the question concerning the aesthetic experience of performance (Baggio and Caravà, 2023, p. 6). A question, the latter, that is also fundamental for a philosophy like Shusterman's somaesthetics and that is precisely at the center of his own adventures in the field of performance art as *l'Homme en Or* (widely and specifically investigated, as I said, in the entire second part of Abrams' instructive book).

Shusterman's reference, in Body Consciousness, to "Gallagher's instructive book, How the Body Shapes the Mind" is surely significant in this context (Shusterman, 2008, p. 64 note).

character – lie in the pragmatist tradition. From this point of view, it is noteworthy his emphasis on the significance of James' "philosophy of embodied mind" (*Ibidem*, p. 139) and especially of Dewey's "unified vision of body and mind": namely, his conception of "a transactional whole of bodymind," according to which the mind "is not opposed to but is rather an emergent expression of the human body" (*Ibidem*, pp. 182, 184, 186).

As I said, ever since the foundation of his new disciplinary proposal Shusterman has always distinguished three branches of somaesthetic research. The relevance of the pragmatic and practical dimensions of somaesthetics must not lead to overlook and undervalue the significance of its analytic dimension (and hence more theoretical) component. In this context, it is thus important to remember that analytic somaesthetics is also interested, among other things, in "the traditional topics in philosophy of mind, ontology, and epistemology that relate to the mind/body issue and the role of somatic factors in consciousness and action" (*Ibidem*, p. 23): all questions, the latter, that play a decisive role also in current debates in the field of philosophy of mind. From this point of view, it seems reasonable to suggest that somaesthetic research, at least in its most analytic and theoretical branch, could benefit from a renewed comparison and open dialogue with contemporary embodied/ enactive approaches to perception and mind. At the same time, it is also possible to argue that these approaches - especially when dealing with questions concerning the importance of "habits of bodily activity" and how the latter are "essential to our mental lives" (Noë, 2009, pp. 77, 95), or questions concerning "specific body-style[s]" and "[t]he posture that the body adopts in a situation," understood as "its way of responding to the environment (Gallagher and Zahavi, 2008, p. 138) - could benefit from entering into a conversation with a philosophy like somaesthetics that explicitly includes, beside its theoretical branch, an equally important practical dimension.

## References

Abrams, J.J. (2022) 'Introduction', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art.* Leiden: Brill, pp. 1–19.

Adorno, Th.W. (2004) Aesthetic Theory. New York: Continuum.

Baggio, G. and Caravà, M. (2023) 'Interview with Shaun Gallagher', *European Journal of Pragmatism and American Philosophy*, XV/2, pp. 1–8.

Bukdahl, Y. (2022) 'Shusterman as Philosopher and the Man in Gold', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art.* Leiden: Brill, pp. 166–176.

Clark, A. and Chalmers, D. (1998) 'The Extended Mind', *Analysis*, 58/1, pp. 7–19.

Desideri, F. (2011) *La percezione riflessa. Estetica e filosofia della mente.* Milano: Raffaello Cortina Editore.

Di Francesco, M. (2003) Introduzione alla filosofia della mente. Roma: Carocci.

Gallagher, S. and Bower, M. (2014) 'Making Enactivism Even More Embodied', *Avant*, 5/2, pp. 232–247.

Gallagher, S. and Zahavi, D. (2008) *The Phenomenological Mind: An Introduction to Philosophy of Mind and Cognitive Science*. London and New York: Routledge.

On the concept of "somatic style," see Shusterman (2011).

- Griffero, T. (2022) 'Somaesthetics and Pathic Aesthetics', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art.* Leiden: Brill, pp. 86–105.
- Iannilli, G. L. and Marino, S. (2020) 'Book Forum on *Estetica e natura umana*: Questions by Simona Chiodo, Roberta Dreon, Shaun Gallagher, Tonino Griffero, Jerrold Levinson, Claudio Paolucci, Richard Shusterman. Replies by Giovanni Matteucci', *Meta: Research in Hermeneutics, Phenomenology, and Practical Philosophy*, XII(2), pp. 591–637.
- Koczanowicz, L. (2022) 'Somaesthetics, Somapower, and the Microphysics of Emancipation', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art.* Leiden: Brill, pp. 61–73.
- Kremer, A. (2022) 'From Pragmatism to Somaesthetics as Philosophy', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art.* Leiden: Brill, pp. 44–60.
- Matteucci, G. (2019) Estetica e natura umana. La mente estesa tra percezione, emozione ed espressione. Roma: Carocci Editore.
- Noë, A. (2009) Out of Our Heads: Why You Are Not Your Brain, and Other Lessons From the Biology of Consciousness. New York: Hill and Wang.
- Shusterman, R. (2000a) *Pragmatist Aesthetics: Living Beauty, Rethinking Art.* 2nd ed. Lanham, Boulder, New York and Oxford: Rowman & Littlefield.
- Shusterman, R. (2000b) *Performing Live: Aesthetic Alternatives for the Ends of Art.* Ithaca (NY): Cornell University Press.
- Shusterman, R. (2007) 'Somaesthetics and the Revival of Aesthetics', *Filozofski Vestnik*, XXVIII/2, pp. 135–49.
- Shusterman, R. (2008) Body Consciousness: A Philosophy of Mindfulness and Somaesthetics. New York: Cambridge University Press.
- Shusterman, R. (2010) 'What Pragmatism Means to Me', *Revue française d'études américaines*, 124/2, pp. 59–65.
- Shusterman, R. (2011) 'Somatic Style', *The Journal of Aesthetics and Art Criticism*, 69/2, 2011, pp. 147–59.
- Shusterman, R. (2017) 'Fits of Fashion: The Somaesthetics of Style', in Matteucci, G. and Marino, S. (eds.) *Philosophical Perspectives on Fashion*. London and New York: Bloomsbury, pp. 92–106.
- Shusterman, R. (2019) 'Bodies in the Streets: The Soma, the City, and the Art of Living', in Shusterman, R. (ed.) *Bodies in the Streets: The Somaesthetics of City Life.* Leiden: Brill, pp. 13–37.
- Shusterman, R. (2022) 'Somaesthetics, Pragmatism, and the Man in Gold: Remarks on the Preceding Chapters', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art*. Leiden: Brill, pp. 243–260.
- Snævarr, S. (2022) 'Shusterman's Pragmatist Philosophy', in Abrams, J.J. (ed.) *Shusterman's Somaesthetics: From Hip Hop Philosophy to Politics and Performance Art.* Leiden: Brill, pp. 23–43.

Stefano Marino Università di Bologna Via Barberia, 4, 40123 Bologna Italy stefano.marino4@unibo.it

DOI: 10.5281/zenodo.10513033