BEYOND THE TECHNOSUPERCRIP: NEURO-BODY-DIVERGENCE AS A POLITICAL SPACE IN THE CRIPBORG PARADIGM

Marianna Piccioli[1]
University of Rome "Foro Italico"
marianna.piccioli@uniroma4.it

Angela Magnanini
University of Rome "Foro Italico"
angela.magnanini@uniroma4.it

Marco D'Onofrio
University of Rome "Foro Italico"
marco.donofrio@uniroma4.it

Chiara Pannone
University of Rome "Foro Italico"
chiara.pannone@uniroma4.it

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ABSTRACT

The paper examines AI and social robotics through Disability Studies, criticizing the risk of the technosupercrip: a technologically enhanced body celebrated for performance rather than true inclusion. In sport, this risk increases because performance can reinforce the ideal of a normative "superhuman" body. The paper therefore proposes rethinking the cripborg paradigm: human-machine hybridization should not mean adapting to norms, but valuing limitation, bodily and neurological diversity, and non-classifiable identities. Technology should not "cure" difference, but legitimize plural ways of existing.

KEYWORDS

Neuro-body-divergence; Cyborgification; Cripborg paradigm; Human-machine hybridization; Social robotics.

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1. Normative algorithms and optimised bodies: the drift of the technosupercrip

In the contemporary educational landscape, the pervasive introduction of Artificial Intelligence (AI) systems and social robotics does not represent a mere technical transition, but an anthropological reconfiguration. The imminent risk of this algorithm-driven shift is the surreptitious reactivation of reductionist models of the human. In this context, Disability Studies offer an indispensable critical prism, deconstructing the medical-individual model that has historically interpreted disability as an intrinsic biological deficit, an internal fault line within the body to be corrected or normalised (Kafer, 2013; Monceri, 2017). In radical opposition to this essentialist view, disability emerges as a relational phenomenon (Shakespeare, 2014/2017; Piccioli, 2020), situated and distinctly political, generated in the gap and interaction among molecular bodies, designed environments, and normed social structures. It is not a stable ontological category, but the historically determined product of intersubjective processes and cultural negotiations (Montalti, 2025). This theoretical shift unsettles the educational assumption that elects the "able body", performing and productive, as the universal standard of reference. When the educational environment is mediated by AI, computational logic risks translating the old medical model into strings of code, encoding neuro-body-divergence not as a plurality of existence, but as a systematic error, deviation, or "noise" to be optimised and brought back to the norm. This political-relational model (Kafer, 2013; Montalti, 2025) frames disability as emerging from the interaction among bodies, technological artefacts, and socio-political norms. Bodies are never technology-free: the human has always been constituted through hybridisation with artifice, and bodily perception itself is shaped by the media and devices we inhabit. Disability thus emerges when technological infrastructures are organised around assumptions of bodily standardisation that exclude divergence from the outset. Technologies are not neutral tools, but historically situated constructs shaped by specific normative expectations. Educational AI platforms, through predictive personalisation, biometric monitoring, and emotion-recognition systems, act as biopolitical dispositifs that define in advance what counts as "adequate", "efficient", and "appropriate". This process becomes particularly problematic when emotional expressions are standardised according to normative models that marginalise neurodivergent forms of affective communication. The cyborg represents the conceptual hinge through which these tensions become visible. As Montalti (2025) notes, the figure originated in medical-military contexts linked to space exploration and was theorised by Clynes and Kline (1960) as a technologically regulated organism designed to optimise adaptation to hostile environments. This

genealogy reveals how human-machine hybridisation initially emerged within logics of control and performance. Haraway's technofeminist reinterpretation (1991), however, transformed the cyborg into a political and theoretical space through which the boundaries between human and machine, natural and artificial, normal and pathological could be challenged. Rather than embodying technological perfection, the cyborg became a figure for thinking hybridity, situated subjectivities, and alternative forms of belonging. Despite this liberatory impulse, capitalist and ableist culture has progressively reabsorbed the cyborg's critical potential, converting it into the hegemonic narrative of the supercrip and, more recently, of the technosupercrip. This rhetoric presents disability exclusively as an individual tragedy to be heroically overcome through prosthetic and technological assistance. Sport, and the Paralympic context in particular, offers a privileged observatory for these dynamics (Howe, 2011): the historical emphasis on measurement, optimisation, and performance renders normative Cyborgification especially visible (Howe & Silva, 2017). Technology is heroised only when it produces hyper-performance mimicking or surpassing the able-bodied norm, a dynamic with three perverse effects: it fuels the illusion that disability can be solved through a technological fix, obscuring systemic barriers; it creates value hierarchies based on socio-economic access to expensive technologies; and it implicitly blames those who cannot or will not perform to such standards. The disabled body is thus tolerated only as a metaphor for overcoming oneself, while the material, vulnerable, and political lives of real people are removed from view. This same performative logic of the technosupercrip now reverberates in AI-driven educational systems, where the successful student is only the one who optimises learning times through the machine. The cripborg stance requires us to view educational and assistive technologies through the lens of ambivalence. As the sociology of technology has shown, devices are neither intrinsically emancipatory nor intrinsically oppressive (Moser, 2006); they act as unstable mediators. AI and social robotics open unprecedented pathways of accessibility for students traditionally excluded from classroom dynamics, but these same infrastructures tend to standardise behaviours, channel learning into rigid pre-programmed pathways, and generate new forms of dependence and control (Bocci & Straniero, 2020). If educational interaction is entirely outsourced to an algorithm serving commercial standardisation, the vital complexity of the pedagogical relationship is impoverished, reducing otherness to a quantifiable datum.

2. Cripborg ecologies: toward a political pedagogy of vulnerability and plural futures

Against the assimilative violence of the technosupercrip, it becomes necessary to overturn the paradigm through the figure of the cripborg. This figure represents the radical appropriation and political self-consciousness of the cyborg figure by the disabled and theoretical community (Montalti, 2025). Unlike the normative and performing cyborg, the cripborg does not pursue the transhumanist transcendence of the body or its erasure; it does not conceal vulnerability, but claims it as a constitutive dimension of the human; and it radically rejects the imperative of performance and optimisation. The cripborg elects interdependence and distributed care as its foundational values. Hybridisation with technology is not seen as an act of submission to the enabling norm (assimilation), but as a political space, an embodied alliance in which plural and unforeseen forms of existence are negotiated. The cripborg does not use the machine to erase limitations, but to inhabit it in dignified, creative, and divergent ways. The intersection of Disability Studies, technofeminism, and posthumanism compels a rethinking of cure, traditionally an asymmetrical intervention in which a healthy subject "repairs" a deficient one: care is here resignified (Milani Comparetti, 1980) as a distributed, ecological practice within networks connecting human and non-human actors (technologies, algorithms, environments). Care is always situated, partial, and traversed by power relations (Montalti, 2025); affectivity too loses its status as a purely individual property and becomes an emergent process arising between bodies. This grounds a radical critique of affective AI and social robotics: a machine can simulate empathy through facial or vocal cues, but cannot assume the ethical responsibility and vulnerability of the educational event. Hence the urgency of a Digital Affective Literacy, a pedagogical pathway developing learners' capacity to understand and critically inhabit machine-mediated affective interactions, so the algorithm is experienced not as a cure for isolation or divergence, but as a mirror validating "other bodies" and non-catalogable identities. Ultimately, the theoretical wager of the cripborg is played out in the reconquest of the dimension of the future. In dominant technocratic imaginaries, disability is constantly erased from possible futures, sacrificed on the altar of transhumanist, eugenic, and hyper-optimised utopias in which technology will finally have eradicated every bodily imperfection. Crip futures oppose this dystopia of compulsory perfection, claiming a tomorrow in which vulnerability, the wheelchair, the prosthesis, and neuro-divergence are legitimate and permanent components of the human landscape. For education, this means definitively abandoning the “Frankenstein Complex”, the technophobic fear of the mechanical monster or, conversely, the Promethean desire to create the perfect machine, in order to learn to inhabit technological progress as a plural terrain. The cripborg thus presents itself not as a distant science-fiction fantasy, but as a current critical and political device capable of

orienting educational design toward inclusive, flexible, and relational environments, where difference is not tolerated as an exception, but celebrated as the only authentic mode of being human.

3. The Paralympic Paradigm as a Narrative and Cultural Device

If the technosupercrip and the cripborg represent two distinct interpretive frameworks for examining the relationship between technology, the body, and disability, the Paralympic movement today constitutes one of the principal contexts in which such representations are produced, disseminated, and negotiated. The value of Paralympic sport, indeed, does not reside exclusively in its competitive dimension, but also in its growing capacity to shape the social imaginary of disability, contributing to the construction of new forms of public recognition. In recent decades, the Paralympic movement has undergone a progressive mediatization that has transformed athletes into symbolic figures shaping collective perceptions of disability (Brittain, 2016; Purdue & Howe, 2012). This process is marked by profound ambivalence: it promotes greater visibility for people with disabilities, countering social invisibility, but also risks consolidating narratives of individual exceptionality and heroic resilience, reproducing what Silva and Howe (2012) term supercrip discourse. Berger (2008) highlights how this heroic representation of the athlete with a disability ultimately fosters a form of apparently positive ableism: the disabled body is socially recognised and celebrated insofar as it succeeds in overcoming its own limits through performances regarded as extraordinary, implicitly reaffirming the normotypical body as the standard of reference. Along similar lines, Straniero emphasises the positive rhetoric of the Paralympic model and of athletes' exceptionality, even when such rhetoric conflicts with reality (Straniero, 2020, p. 76). Representations of Paralympic athletes, then, are not mere descriptions of reality but narrative and pedagogical devices contributing to the social construction of disability. As Bocci and Straniero (2020) argue, the disabled body is always narrated before it is observed: cinema, television, literature, photography, advertising, and journalism produce interpretive frames that assign meaning to bodily difference and shape how it is perceived and socially recognised. Narratives actively participate in producing collective imaginaries, helping define what a society considers normal, desirable, or exceptional. Narratives thus assume an educational function, contributing to the formation of attitudes, expectations, and inclusive practices. Media and athletes' own accounts may influence how students, teachers, coaches, and the wider public conceptualise disability, affecting social recognition and inclusive behaviours (Hardin & Hardin, 2004; Berger, 2008). When such narratives convey the plurality of bodily experiences, value interdependence, and

acknowledge context in constructing participation, they promote a culture of inclusion. Conversely, when they exclusively emphasise individual heroism, the overcoming of disability, or the exceptionality of performance, they risk reinforcing ableist stereotypes and transmitting the idea that the social recognition of persons with disabilities depends on their capacity to approximate normative models of the efficient body (Berger, 2008; Bocci & Straniero, 2020). The Paralympic athlete, therefore, occupies a privileged position within these cultural and pedagogical processes. Their testimonies become instruments through which meanings, identities, and cultural models of disability are negotiated. Analysing such narratives thus means investigating not only the ways in which athletes represent themselves, but also the cultural models that they help to produce, consolidate, or transform.

4. Methodology

In light of the theoretical premises outlined above, this study investigates whether, and to what extent, the paradigms of normative Cyborgification (Howe & Silva, 2017) and the cripborg emerge in the autobiographical narratives of highly visible Paralympic athletes. The Paralympic context represents a privileged field of observation because its performance-oriented nature makes the processes of technological mediation, optimisation, and narrative identity construction particularly visible. The analysis was conducted on a corpus of interviews given by four Paralympic athletes to national daily newspapers, weekly news magazines, and online platforms. In accordance with the principles of research ethics, the testimonies underwent a process of anonymisation in order to ensure that the results were presented in a manner consistent with confidentiality, equity, and deontological rigor. The collected material was analysed through content analysis (Mayring, 2004), conducted by two independent raters on the basis of categories defined a priori. The analytical framework followed a deductive logic, grounded in the theoretical and conceptual considerations previously illustrated. Starting from the theoretical constructs of the technosupercrip and the cripborg, a system of macrocategories, subcategories, and narrative indicators was developed. The resulting analytical framework is presented in Table 1 and guided the identification and coding of meaning units throughout the corpus. In the second phase, prosthesis-using Paralympic athletes were selected on the basis of their media and public visibility. Four Paralympic athletes were selected, two women and two men, belonging to four different sports disciplines. This choice is consistent with the exploratory nature of the study, which is configured as a pilot investigation: the limited number of profiles allows for an initial analytical reconnaissance of the phenomenon, to be understood as a research pathway

open to further investigation and expansion, also in light of the results that will emerge from the analysis. The four selected athletes began their sporting careers between 2003 and 2010, and among them, only one athlete is still active. This information is not reported in greater detail for ethical reasons related to the protection of privacy and respect for anonymisation criteria. Interviews were then selected. Between five and seven interviews were collected for each athlete through targeted online searches combining athletes' names with keywords such as "interview", "sport", "prosthesis", and "body". Data collection continued until the minimum number of interviews established for each profile had been reached. In the third phase, on the basis of the analytical grid constructed from the two theoretical approaches of the technosupercrip and the cripborg, specific textual passages, defined as "natural units of meaning", were identified in the interviews. These units, when attributable to the indicators established a priori, were labeled according to the corresponding indicators. Coded units were recorded in an Excel matrix in order to calculate indicator frequencies for each athlete. Finally, in the last phase, the researchers systematised and discussed the results using additional matrices constructed on the same content grid. In this phase, the analysis was not organised by individual athlete, but descriptively in relation to macrocategories, subcategories, and indicators, in order to provide an overall reading of the recurrences, convergences, and tensions that emerged in the corpus.

Table 1: Analytical grid of the two macrocategories: "Normative algorithms and optimised bodies: the drift of the technosupercrip" and "Cripborg ecologies: political pedagogy of vulnerability and plural futures"

Conceptual Macrocategory	Subcategory	Narrative Indicators in the Athlete
Normative algorithms and optimised bodies: the drift of the technosupercrip	Medical-individual model	• References to the body as "defective", "missing", or "to be repaired". • Focus on impairment as the sole and exclusive cause of one's limitations. • Technology viewed as a mere external aid applied to an isolated biology.

	Logic of the Technosupercrip and normative Cyborgification	• Use of rhetorics of “self-overcoming”, heroism, and “defeating disability”. • Celebration of technology only because it enables one to equal or surpass “able” bodies. • Presence of the performative imperative and the extreme quantification of results. • Idea of the “technological fix”: technology solves everything, obscuring systemic and economic barriers. • Implicit blaming of those who do not wish to or cannot perform according to these standards.
Cripborg ecologies: political pedagogy of vulnerability and plural futures	Cripborg stance	• Explicit rejection of labels such as “hero” or “superman/superwoman”. • Claiming vulnerability, fatigue, and pain as constitutive dimensions of experience. • Technology used not to erase limitation, but to “inhabit limitation” in a dignified, creative, and divergent way. • Self-perception as a hybrid identity in which the boundaries between natural/artificial and human/machine are blurred.
	Interdependence and Care	• Sporting success narrated as the result of a network (equal relationships with coaches, guides, prosthesis makers, and environments). • Rejection of pietistic or paternalistic narratives based on “tenderness” or on the need to be assisted. • Recognition of the technological medium and the context (track, pool, etc.) as active co-protagonists.
	Crip Futures	• Vision of a future in which non-standard bodies, wheelchairs, or prostheses do not have to disappear, but are legitimate and permanent elements. • Demand for flexible sporting and infrastructural design from the outset, one that does not regard the Paralympic athlete as an exception or a derogation from the norm.

5. Results

5.1. Macrocategory 1 - Normative algorithms and optimized bodies: the technosupercrip drift

Athlete 1 presents the highest number of references to the technosupercrip macrocategory (Table 2). The dominant narrative concerns self-overcoming and heroism, exemplified by statements such as “All my energy goes toward overcoming it”. By contrast, no references emerged to the blaming of individuals unable or unwilling to conform to performative standards. For Athlete 2, 8 references to the first macrocategory were counted. Here too, the rhetoric of self-overcoming and heroism prevails, accounting on its own for 75% of her references to the macrocategory: “I believe strongly in sport […] I believe it can give you superpowers, not just physically.” Completely absent, on the other hand, are the indicators linked to the medical-individual model and those relating to the exaltation of technology to equal the “able-bodied” and to “technological fix” narratives. For Athlete 3, 8 references to the first macrocategory were counted. The rhetoric of self-overcoming prevails: “When you fall, get up and walk again, and you’ll feel even stronger than before”; “I’m practically allergic to the word impossible.” Absent are impairment as the sole cause of limitations and technology as a mere external aid. For Athlete 4, 7 references to the first macrocategory were counted. The performative imperative and the exaggerated quantification of results prevail: “three weeks after starting, I broke my first Paralympic record in the 100 meters.” Absent are impairment as the sole cause of limitations, technology as a mere external aid, the exaltation of technology to equal the “able-bodied,” and the “technological fix” narrative.

5.2. Macrocategory 2 - Ecologies of the cripborg: a political pedagogy of vulnerability and plural futures

For Athlete 1, 22 references to the second macrocategory were counted. The demand for flexible sport and infrastructural design prevails: “it shouldn’t be necessary to travel as much as 200 kilometers just to be able to do sport”. Completely absent, by contrast, are hybrid identity, the technological device as co-protagonist, and non-standard bodies as a permanent presence. For Athlete 2, 27 references were recorded - the highest value in the corpus. Athletic success narrated as the outcome of a network prevails: “I’ve never managed to do anything on my own; I’ve always needed a team of people working together.” Completely absent are crip futures. For Athlete 3, 14 references to the second macrocategory were recorded. Success narrated as the outcome of a network prevails: “my family, my wife in particular, was something of a director”; “I met a new coach […] thanks to him I finally managed to improve my training method.” Absent are hybrid identity, the technological device as co-protagonist, and the legitimization of non-standard bodies as a permanent presence.

For Athlete 4, 14 references were recorded, evenly split between success narrated as the outcome of a network: “I have a great coach. Team, trainer, and personal trainer will be with me” and the rejection of pitying narratives. Absent are the technological device as co-protagonist and crip futures.

5.3. Cross-cutting reading

On the technosupercrip dimension, comparison across the profiles is dominated by a clear quantitative imbalance: Athlete 1 stands out sharply from the other three. Nevertheless, an element of convergence remains: three out of four athletes (all except Athlete 4) share the same prevailing indicator, the rhetoric of self-overcoming. If, however, one looks at the relative weight of the two macrocategories within each profile, rather than at the absolute figure alone, the picture becomes more nuanced: Athlete 1 is the only one with a narrative perfectly balanced between the two paradigms (50% of her overall references fall under technosupercrip, 50% under cripborg), while all three other athletes lean more clearly toward cripborg. The high absolute number of technosupercrip references recorded for Athlete 1 therefore appears linked more to the overall volume of her interviews and her greater media exposure than to a specific narrative inclination toward that paradigm. On the cripborg dimension, the two female athletes (Athlete 1 and 2) total more references in absolute terms than the male athletes, which would at first suggest a greater female propensity to valorize interdependence, relational networks, and vulnerability. This finding, however, must be read in light of what has just been observed: for Athlete 2, the imbalance toward cripborg is confirmed even in relative terms, with the highest value in the corpus, whereas for Athlete 1, as noted, the high absolute number is partly an effect of overall volume, given that her narrative is evenly divided between the two paradigms. The gender-based reading therefore finds confirmation primarily in Athlete 2’s profile, rather than in a shared and uniform pattern between the two female athletes. Here too a strong convergence emerges on the prevailing indicator: athletic success narrated as the outcome of a relational network is among the most represented indicators in three out of four profiles. Only one indicator, by contrast, is absent across all four profiles without exception: the legitimization of non-standard bodies as a permanent and non-eliminable presence, a sign that the most radically forward-looking dimension of the cripborg paradigm oriented toward imagining plural futures, remains the least articulated in the autobiographical narratives analyzed. Overall, then, the corpus presents a picture in which the two theoretical drifts are not mutually exclusive alternatives but coexist, with differing weights, within the same narratives: each athlete, albeit with different emphases, alternates between moments in which technology is recounted as a

tool of an almost heroic overcoming and others in which it is instead traced back to a network of relationships and shared care. This coexistence, rather than a contradiction, seems to confirm the still-open and evolving nature of the process of discursive redefinition of the Paralympic body as mediated by technology.

Table 2: Occurrences relating to the macrocategory “Normative algorithms and optimized bodies: the technosupercrip drift”

Sub-category	Indicator	Athlete 1	Athlete 2	Athlete 3	Athlete 4	TOT
Individual-medical model (Essentialism and Biologism)	References to the body as "defective," "lacking," or "in need of repair"	3	0	1	1	5
	Focus on impairment as the sole and exclusive cause of one's own limitations	2	0	0	0	2
	Technology viewed as a mere external aid applied to an isolated biology	1	0	0	0	1
Technosupercrip logic and normative Cyborgification	Use of rhetoric of "self-overcoming," heroism, and "defeating disability"	9	6	3	2	20
	Exaltation of technology solely because it allows one to equal or surpass "able" bodies	3	0	1	0	4
	Presence of the performative imperative and exasperated quantification of results	2	1	1	3	7
	The "technological fix" idea: technology solves everything, obscuring systemic and economic barriers	2	0	1	0	3
	Implicit blaming of those who will not or cannot perform according to these standards	0	1	1	1	3
	TOT	22	8	8	7	45

Table 3. Occurrences relating to the macrocategory “Ecologies of the cripborg: a political pedagogy of vulnerability and plural futures”

Sub-category	Indicator	Athlete 1	Athlete 2	Athlete 3	Athlete 4	TOT
Cripborg Stance	Explicit rejection of the labels "hero" or "superman/superwoman"	2	1	2	1	6
	Reclaiming vulnerability, fatigue, and pain as constitutive dimensions of experience	2	5	3	2	12
	Technology used not to erase the limit, but to "inhabit the limit" in a dignified, creative, and divergent way	3	3	1	1	8
	Self-perception as a hybrid identity blurring the boundaries between natural/artificial and human/machine	0	2	0	2	4
Interdependence and Distributed Care	Sporting success narrated as the outcome of a network (peer relationships with technicians, guides, prosthetic makers, environments)	5	8	4	4	21
	Rejection of pitying or paternalistic narratives based on "tenderness" or the need to be assisted	1	4	3	4	12
	Recognition of the technological medium and context (track, pool, etc.) as active co-protagonists	0	4	0	0	4
Crip Futures	A vision of the future in which non-standard bodies, wheelchairs, or prosthetics need not disappear, but are legitimate and permanent elements	0	0	0	0	0
	A call for flexible sport and infrastructural design from the outset, one that does not treat the Paralympic athlete as an	9	0	1	0	10

	exception or a deviation from the norm					
	TOT	22	27	14	14	77

6. Discussion

The investigation provides an articulated picture of representations of technology applied to disability, highlighting how a conceptual transition is taking place in the narratives of Paralympic athletes: from the original configuration of the cyborg, centred on processes of control and optimisation (Clynes & Kline, 1960), toward the subversive potential of the cripborg activated by technofeminist thought (Haraway, 1991).

The results show that the first macrocategory (Table 4), dedicated to normative algorithms, optimised bodies, and the drift of the technosupercrip, records 45 occurrences within the narrative corpus. In particular, the subcategory relating to the medical-individual model, which includes 8 references, indicates that technological discourse remains anchored in a "curative" horizon: the machine is conceived primarily as a device for filling deficits, repairing deviations from the norm, or accelerating adaptation processes. This reading is inscribed within the broader critique of the medical-individual paradigm of disability, which interprets bodily difference as a deficit internal to the subject to be corrected or normalised, rather than as a relational and politically situated phenomenon (Kafer, 2013; Monceri, 2017; Piccioli, 2020; Shakespeare, 2014/2017). Although explicit references to the body as "defective", "missing", or "to be repaired" are not predominant, their presence confirms the persistence of an ableist and normalising matrix, in which impairment is interpreted as the primary cause of personal limitations. In the second subcategory, the most recurrent indicator concerns the rhetoric of "self-overcoming", heroism, and "defeating disability", which can be traced back to the individualist conceptual horizon of the self-sufficient supercrip, widely disseminated in the sporting context, both professional and amateur (Howe, 2011; Silva & Howe, 2012; Bocci & Straniero, 2020). This finding suggests that the narrative of disability continues to be frequently organised around an imaginary in which the disabled body becomes socially acceptable primarily when it demonstrates that it can go beyond limitation, compensate for it, or transform it into exceptional performance. Along these lines, the presence of the performative imperative and the quantification of results also points to the logic of normative cyborgification: technology, body, and performance are read according to a paradigm of

efficiency, measurability, and optimization (Howe, 2011; Howe & Silva, 2017). More marginal, yet relevant, are the occurrences relating to the "technological fix", to the blaming of those who cannot or do not wish to perform, and to the conception of technology as an external aid applied to an isolated biology. Although quantitatively less represented, these categories reveal the ideological core of the technosupercrip: the idea that technology is legitimised above all when it makes it possible to correct, enhance, or render the divergent body competitive with respect to the able-bodied norm (Moser, 2006).

Table 4: Occurrences relating to the macrocategory "Normative algorithms and optimised bodies: the drift of the technosupercrip"

Normative algorithms and optimised bodies: the drift of the technosupercrip	Medical-individual model	References to the body as "defective", "missing", or "to be repaired"	**5**
		Focus on impairment as the sole and exclusive cause of one's limitations	**2**
		Technology viewed as a mere external aid applied to an isolated biology	**1**
	Logic of the Technosupercrip and normative Cyborgification	Use of rhetorics of "self-overcoming", heroism, and "defeating disability"	**20**
		Celebration of technology only because it enables one to equal or surpass "able" bodies	**4**
		Presence of the performative imperative and the extreme quantification of results	**7**
		Idea of the "technological fix": technology solves everything, obscuring systemic and economic barriers	**3**
		Implicit blaming of those who do not wish to or cannot perform according to these standards	**3**
		TOT	**45**

The second macrocategory (Table 5), centered on “cripborg ecologies”, presents 77 occurrences within the corpus analysed, highlighting how technological discourse is shifting from an instrumental and individualistic conception toward an ecological and distributed vision, consistent with the political-relational model (Shakespeare, 2014/2017; Piccioli, 2020). In the first subcategory, dedicated to the cripborg stance, 30 occurrences were identified, and the most represented indicator concerns the claiming of vulnerability, fatigue, and pain. This aspect is particularly relevant in the performance-oriented sporting context, in which athletes’ fatigue constitutes a central dimension of the drive toward improvement: an educational element of sport (Farnè, 2008). In this field, the claiming of effort makes it possible to interpret the cripborg not as an enhanced and invulnerable subject, but as a figure that assumes and claims its own vulnerability (Haraway, 1991; Montalti, 2025).The cripborg stance is also characterised by the capacity to use technology to “inhabit limitation” and to construct through it a dignified, creative, and divergent identity. This aspect appears to be particularly internalised by some Paralympic athletes with more recent sporting careers, confirming how technology can confer dignity upon limitation understood as a personal and individual dimension. In relation to this, although to a lesser extent, some athletes’ recognition of their own hybrid identity emerges, underscoring the value of technology when it is flexible in relation to the irreducible singularity of bodies and capable of transforming gazes, modifying the normative frames within which such bodies are read.

The second subcategory instead delineates a relational technology that does not operate as an individualising prosthesis, functional to inscribing the subject within a trajectory of “overcoming”, but as a device that mediates connections and as an infrastructure for networks of care and interdependence. From this perspective, the most recurrent indicator is represented by the configuration of sporting success as the product of a relational network, with 21 occurrences, a value almost equivalent to that identified for the rhetorics of self-overcoming in the first macrocategory, equal to 20 occurrences. This element is particularly significant because it shows that, although some adherence to supercrip logics persists, a critical tension also emerges against an individualist and capitalist perspective, through the recognition of the team and care networks as cooperative means essential for achieving results and common benefits, not only in terms of performance but also in relation to social participation in a broader sense. In line with this relational and contextual approach, it should be noted, although less markedly, that technology does not represent an omnipotent resource capable of breaking down every barrier, but rather a

component of a broader context, one of the environmental factors that can act as an active co-protagonist together with other elements.

Finally, the recurrence of the rejection of pietistic or paternalistic narratives is significant, as it signals a distancing from assistentialist compassion. With regard to the vision of crip futures, the narrative corpus shows that this scenario remains only partially thematised and not fully consolidated: no Paralympic athlete reports explicit references to a future in which divergent bodies and technological aids are legitimate and permanent instruments, as expressed in the first indicator of the subcategory. Instead, the need, together with the explicit demand, for flexible sporting and infrastructural design from the outset is clearly highlighted. The distribution of occurrences in this case confirms the shift from the model of subsequent adaptation to that of structural inclusion: it is not a matter of integrating the Paralympic athlete as an exception to the norm, but of rethinking the norm itself starting from the plurality of bodies and forms of participation (Piccioli, 2020; Bocci & Straniero, 2020).

Table 5: Occurrences relating to the macrocategory "Cripborg ecologies: political pedagogy of vulnerability and plural futures"

Cripborg ecologies: political pedagogy of vulnerability and plural futures	Cripborg stance	Explicit rejection of labels such as "hero" or "superman/superwoman"	**6**
		Claiming vulnerability, fatigue, and pain as constitutive dimensions of experience	**12**
		Technology used not to erase limitation, but to "inhabit limitation" in a dignified, creative, and divergent way	**8**
		Self-perception as a hybrid identity in which the boundaries between natural/artificial and human/machine are blurred	**4**
	Interdependence and Care	Sporting success narrated as the result of a network (equal relationships with coaches, guides, prosthesis makers, and environments)	**21**
		Rejection of pietistic or paternalistic narratives based on "tenderness" or on the need to be assisted	**12**
		Recognition of the technological medium and the context (track, pool, etc.) as active co-protagonists	**4**

	Crip Futures	Vision of a future in which non-standard bodies, wheelchairs, or prostheses do not have to disappear, but are legitimate and permanent elements	**0**
		Demand for flexible sporting and infrastructural design from the outset, one that does not regard the Paralympic athlete as an exception or a derogation from the norm	**10**
		TOT	**77**

Thus, the preliminary analysis of this pilot study reveals a progressive shift from the view of technology as an intervention on a body to be normalised toward technology as an unstable mediator to be politically negotiated (Moser, 2006). The data therefore, seem to open an interpretive space alternative to the dominant rhetoric: while the heroic narrative, supported by technological aid, emphasises individual success and tends to obscure systemic barriers, the cripborg stance makes visible the collective, infrastructural, and affective conditions that sustain participation.

7. Conclusions

This study explored whether autobiographical narratives of Paralympic athletes reproduce the technosupercrip model or anticipate the cripborg's political-ecological perspective. The findings suggest these paradigms coexist within the same narratives, reflecting an ongoing cultural reconfiguration of disability in the age of intelligent technologies. Narratives continue to mobilise self-overcoming, heroism, and performance, confirming that disabled bodies are often recognised when they approximate dominant ideals of efficiency and achievement, with technology interpreted as a tool of optimisation. At the same time, athletes increasingly emphasise interdependence, care networks, and relational understandings of technology: participation emerges not from individual capacities alone, but through interactions among bodies, technologies, environments, and social relationships. Nevertheless, the most radical dimension of the cripborg framework remains largely absent. None of the athletes explicitly imagines futures in which prostheses, wheelchairs, and neuro-body-divergent embodiments are recognised as ordinary and legitimate expressions of human plurality. This suggests that bodily normalisation continues to function as an implicit cultural horizon. Mitchell and Snyder's (2000) concept of Narrative Prosthesis offers a productive lens through which to interpret these findings. Disability functions not only as a lived experience but also as a narrative device through which cultures organise meanings and imaginaries. The autobiographical accounts analysed here do more than

describe individual trajectories; they contribute to shaping collective understandings of disability, technology, and human possibility. In contemporary contexts increasingly shaped by AI and social robotics, prosthetic technologies themselves risk becoming new forms of narrative prosthesis through which ideals of enhancement and optimisation continue to be negotiated and reproduced. These findings also have important pedagogical implications. If narratives contribute to shaping collective imaginaries of disability, they influence how educators, designers, and policy makers understand inclusion. The challenge is therefore not to replace one dominant narrative with another, but to expand the plurality of narratives available. From this perspective, the cripborg offers a useful framework for recognising vulnerability, interdependence, and neuro-body-divergence as legitimate dimensions of human experience. The findings should be interpreted in light of the limitations of a pilot study: the small number of athletes and reliance on publicly available interviews do not allow broad generalisations. Nevertheless, this exploratory research opens promising avenues, including expanding the corpus, adding disciplines and cultural contexts, and analysing disability representations produced by AI systems themselves. Ultimately, moving beyond the technosupercrip requires a shift in perspective. Rather than asking how technology can make disabled bodies conform more closely to normative ideals of efficiency, educational research is challenged to ask how technologies, environments, and practices can recognise vulnerability, interdependence, and neuro-body-divergence as ordinary conditions of human existence. In this sense, the cripborg is not simply an alternative model of embodiment, but a political and pedagogical framework through which more plural futures may be imagined and enacted.

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