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1 **'It's not a part of me, but it is what it is': The struggle of becoming en-wheeled**

2 **after spinal cord injury**

3 **Abstract**

4 **Purpose:** Many people who experience spinal cord injury become long-term wheelchair

5 users. This article addresses the process of becoming en-wheeled through the case

6 example of a disabled man called Patrick.

7 **Design:** An intrinsic case study informed by posthumanist developments was used.

8 Within this design, Patrick and his manual wheelchair were the entangled participants of

9 the inquiry.

10 **Methods:** Interviews and fieldwork observation with Patrick were conducted.

11 Qualitative data were analysed using the posthumanist notion of 'assemblages'.

12 **Results:** The results illuminate Patrick's struggle of negotiating a new embodied

13 selfhood that includes the wheelchair. Patrick engaged in ableist rehabilitation after

14 spinal cord injury to recuperate the capacity to walk and break his connection with the

15 wheelchair. After extensive treatment of his body, he reluctantly assumed his cyborg or

16 posthuman condition.

17 **Conclusion:** The analysis and discussion resulted in a theoretical frame that presents

18 the notions of positive and negative enwheelment as two ends of a continuum. In doing

19 so, the paper offers a useful tool for understanding and addressing enwheelment plus

20 other cyborgification processes. We advocate for its acceptance into the disability

21 studies and rehabilitation practice repertoire.

22

Introduction

Worldwide, ~2.5 million people live with spinal cord injury (SCI), with more than 130,000 new injuries reported each year. SCI results in the impairment of the communication between the brain and the rest of the body. This impairment affects several body functions, including the capacity to walk. As a result, many individuals living with SCI require the use of a wheelchair to move. Not surprisingly, this 'implement technology' [1] alters the way new users experience the world around them, and changes their relations with their bodies and the bodies of others. Wheelchairs matter because they shape people's journey through life, where and how far they can go, and whom they could go with. Therefore, addressing the evolving meanings and roles of wheelchair use throughout the life of a person is important to understand the complexities of living with SCI and disability in society.

Despite being a 'worthy topic' [2], the relationship between disabled people and their wheelchairs has received very little *focussed* attention in disability and rehabilitation studies. One notable exception is the work of Winance [3-5], who explored the mutual shaping of disabled people and their wheelchairs through the processes of material and emotional adjustment. Another exception is the work of Papadimitriou [6], who used the term 'en-wheeled' to refer to individuals with new SCI learning how to use and live through their wheelchairs. Becoming en-wheeled is a process of accepting the wheelchair as an extension and integral part of one's body and its habitual actions. In this sense, long-term wheelchair users epitomise what Haraway described as cyborgs or human–machine hybrids [7].

According to Sparkes *et al.* [8], the process of becoming en-wheeled is a key aspect of cyborgification for people post-SCI. Briefly, cyborgification denotes the coupling of human and technology. As Howe [9] argued, cyborg bodies can be situated

51 along a continuum from those that require very little technological aid to those who

52 benefit greatly from technology. Likewise, Norman and Moola [10] noted that cyborgs

53 range from the apparently trivial, such as corrective eyewear, to more anxiety-inducing

54 forms, such as restorative prosthetics. Whatever is the case, the metaphor of the cyborg

55 problematizes the supposedly clear boundary between human body and assistive

56 technology. As part of this concern, theories of the posthuman or cyborg have

57 reconsidered the question of agency.

58 From a humanist perspective, "agency is an innate characteristic of the

59 essentialist, intentional free subject" [11, p.733]. In contrast, posthumanism views

60 agency as "enacted, generated in, with, and through interactions and entanglements of

61 people with technologies as part of more-than-human worlds" [12, p.29]. Underpinning

62 this viewpoint are two core arguments. First, not only is agency attributed to humans,

63 but also to non-humans and matter. Matter has agentic capacity, that is to say, the ability

64 to animate, to act, to generate reactions. In practice, this implies that "one has to

65 suppress his or her humanist assumption that human beings act and material objects are

66 simply used" [13, p. 114]. Second, agency is horizontally distributed and relational.

67 Agency is not restricted to a bounded subject, but exists in relational networks or

68 assemblages of human and non-human actors that operate together as a whole. For

69 example, a human body comes together with a wheelchair in order to configure a

70 human-nonhuman assemblage that works as a functional entity. Within this intimate

71 assemblage, there is no clear distinction between the individual and the wheelchair. As

72 Pickering [14, p. 26] noted, "the human actors are still there but now inextricably

73 entangled with the nonhuman".

74 To express the interplay of human and nonhuman agency, Pickering uses the

75 metaphor 'dance of agency' in which both elements are "mangled in practice" (p. 23).

3

76 Importantly, the elements participating in this 'dance' do not possess agency in and of

77 themselves, but are mutually and emergently constitutive of one another. As Freeman

78 [15] puts it, "human and nonhuman entities co-construct dynamic and influential

79 networks of associations". Thus, a person living with SCI *becomes* in an emergent

80 relation with the wheelchair in the human body-wheelchair assemblage. Both *become*

81 *together* by virtue of being connected. This means that not just the components in the

82 assemblage act, but the assemblage itself acts. Bennett [16] named this 'agentic

83 assemblage'.

84 As agentic, assemblages are always evolving to include broader network

85 connections with other assemblages. Given this interconnectedness, it is impossible to

86 conceptualize the human body–wheelchair assemblage as consisting only of these two

87 elements [17,18]. Therefore, addressing the basic human body–wheelchair assemblage

88 requires also considering the relations with other affecting elements (e.g., walkers,

89 disability discourses) and broader assemblages, e.g., rehabilitation environments

90 [Reference removed for double blind review 2]. However, as Brownlie and Spandler

91 [19] warned, these relations are extensive, so we have to be selective. In this regard,

92 researchers make what Barad [20] termed 'agential cuts' in deciding what to *focus on*

93 and how to present their arguments. As Lupton put it (11, no page), "they engage in

94 creative imaginings in attempting to map the entanglements, assemblages… and

95 becomings that are represented in research participants' words and practices'". In this

96 article, we enact an agential cut in order to focus on the human body-wheelchair

97 assemblage along with its key relations with other assemblages and elements. We do

98 this empirically by documenting and discussing the process of becoming en-wheeled of

99 Patrick.

100

4

Method

101

102   This article is grounded on a four-year project designed to travel Patrick's

103 journey through illness and disability. Patrick is a 46-year-old man diagnosed with

104 chordoma, a poor prognostic cancer that is aggressive and locally invasive [21]. Given

105 that his chordoma is located at the thoracic spine, it caused damage in the spinal cord.

106 Over a span of six years, he had six life-threatening surgeries in order to remove the

107 tumour. Each new surgery provoked further harm in his spine, eventually resulting in a

108 complete paraplegia.

109   X first met Patrick in an adapted gym where the former was a volunteer, and

110 invited him to participate in a series of recorded interviews that would explore his

111 experience of illness and disability. Prior to data collection, the research obtained the

112 approval of the Ethics Committee of Research on Humans from the University Y. In

113 accordance with ethical requirements, Patrick gave written informed consent to

114 voluntarily participate in the project and was fully aware of his ability to withdraw at

115 any stage without reprisal. Thenceforth, consent was processual and fully informed.

116 This means that Patrick was invited to review his participation as the research project

117 progressed and it became clearer what his role might entail.

118   Throughout the project, three data-prompted interviews were conducted [22].

119 The personalized prompts included images, objects and text, which served to stimulate

120 discussion in the interview setting. The interviews were loosely structured, and Patrick

121 was encouraged to share stories about his experiences in his own words and according

122 to his own relevancies. X invited Patrick to reflect upon key events, and to discuss his

123 connection with different 'disability artifacts' [23]. To do so, detail-oriented,

124 elaboration and clarification probes were used [24]. Probes included 'could you tell me

125 more about that (experience; photograph; object)?' 'Can you give me an example?'

5

126 'How did that affected your life?' 'Could you explain that further?' All the interviews

127 were conducted at Patrick's home and totalled six hours. Alongside with these

128 interviews, participant observation and informal interviews via telephone and instant

129 messaging were conducted. To ensure a nonhierarchical relationship with Patrick, X

130 became involved in a reciprocal sharing of his personal stories. Thanks to the sincere

131 rapport built throughout the research, Patrick started to contact him by own initiative to

132 share new stories, images and personal thoughts. The information exchange gradually

133 increased, and this prolonged contact with Patrick allowed to gather interesting and

134 significant data on enwheelment without forcing the emergence of the topic. Currently,

135 X has abandoned the role of the researcher, but he is still in permanent contact with

136 Patrick to support him and keep listening his stories.

137   Given the multi-layered nature of the research, supportive but 'critical friends'

138 versed in qualitative research, disability and physical activity were also involved in the

139 elaboration of the project. Their role was to stimulate reflexivity and alternative views,

140 examine matters like theoretical preferences, and ask provocative questions regarding

141 data and writing [25]. This collaboration resulted in some previous works on the case

142 [XXX], which were useful to provide a preliminary backdrop for the particular focus of

143 this paper.

144   The data were analysed using narrative analysis that was sensitized by a 'more-

145 than-human' perspective [26]. That is to say, while narrative research focuses on

146 humans and the meanings they construct as the primary source of data, we incorporated

147 attention to materiality through the analysis, thus shifting the focus from Patrick and his

148 stories to include a consideration of non-human entities. Accordingly, we used the

149 notion of assemblage as the key analytical reference. This notion has proved useful to

150 analyse narrative data and attend the material realities of disability without embracing

6

151 essentialist understandings of the impaired body [27,17]. For our study, we have

152 inspired in the he work of Gibson [e.g. 28,29,30], who demonstrated –theoretically *and*

153 empirically– how thinking through assemblages is an ingenious and fruitful way of

154 addressing the relationships between people and technologies in the context of

155 rehabilitation. Importantly, her work shows how assemblage thinking focuses on

156 processual, rather than fixed connections. Accordingly, we do not just examine the

157 combination of elements comprising the assemblage (Patrick and the wheelchair), but

158 also the consequences resulting from the different ways those elements interact, i.e., the

159 process of becoming en-wheeled.

160 Against this analytical backdrop, our exploration proceeded as follows. First, we

161 examined data to describe and interpret how Patrick's enwheelment developed over

162 time. Second, we discussed these interpretations by reading them in relation to other

163 cases of enwheelment available in literature. Here, we identified significant contrasts

164 between the ways Patrick and other people talked about, perceived and felt the

165 wheelchair. We interpreted those contrasts through posthuman disability studies in order

166 to amplify and deepen our insights. This discussion prompted us to engage in theory

167 building. Progressively, our reflections led to the identification of two modes of

168 enwheelment that, remarkably, spread to other types of cyborgification.

169

170 **Restitution assemblage**

171 The doctor said to me, 'Man, use the wheelchair!' and so. No, I do not want to,

172 man. I want to walk again, you know?

173

174 Patrick's process of becoming en-wheeled was framed by restitution. Although

175 'restitution' has been defined as a dominant narrative that structure illness and disability

176 stories [31, Reference removed for double blind review 1], it can also be seen as an

177 agentic assemblage made up of narrative *and* material components [Reference removed

178 for double blind review 2]. This large assemblage includes smaller assemblages made of

179 stories, interactions, medical and rehabilitation procedures, bodies, objects, buildings

180 and fluids that work together to produce specific practices of becoming. In the case of

181 Patrick, these practices were oriented to turn the 'I can no longer walk' of his injured

182 embodiment into 'I can walk again'.

183   Given his focus on walking again, Patrick did not embraced the wheelchair.

184 However, that Patrick neglected the possibility of incorporating it in his way of being

185 did not prevent him to develop a positive and productive cyborg identity in relation to

186 other technologies. For instance, he accepted and celebrated massive inorganic materials

187 (i.e. prosthesis) inside of him, which allowed him to function on a daily basis (Figure 1).

188 Indeed, he viewed this 'metalwork' as a *"medical piece of art"* [i] and part of the

189 *"magic"* he needed to return to his former life as able-bodied.

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198 **Figure 1.** The prosthesis

199

200   Patrick: The photo is awesome. In the middle you can see all the machinery (...)

201   Fourteen screws there… it's a worthwhile image.

202   Javier: Did you see yourself recognised in the image?

203   Patrick: Of course, I knew it was me. I knew it was me, man.

204

205   The prosthesis, which Butryn [1] catalogued as 'self technologies', were

206   compatible with the restitution assemblage, as they had the ability to normalise the

207   body. In contrast, the wheelchair reminded Patrick of the impossibility of walking

208   again, that is, of recovering his 'normal' life prior to SCI. In this sense, using the

209   wheelchair was incompatible with restitution. At the same time, though, the wheelchair

210   was a constitutive part of restitution, playing an active role in the shaping of Patrick's

211   experience of SCI. Specifically, it worked as a looking glass that forced comparisons

212   between past, present and future [32]. The wheelchair threatened the temporal

213   orientation of restitution, as well as its designed endpoint (i.e. walking again). With the

214   restitution narrative operating, Patrick's anticipations of the future, or 'material

215   imaginings' [33], omitted the wheelchair. In restitution terms, the acknowledgement of

216   Patrick-wheelchair would represent the acceptance of a defeat.

217

218   **Ableist rehabilitation**

219   Patrick regarded the wheelchair as a problem to overcome or eliminate through

220   engaging in ableist rehabilitation. Ableism is a pervasive ideology that discriminates

221   disabled people and characterises them as inferior to the non-disabled [34]. By ableist

222   rehabilitation, we refer to those conceptions and practices aiming to restore the 'normal'

223   life and body that ableism uphold as leitmotifs of successful citizenry. Patrick's

224   rehabilitation represented a fight to return to health or to normalcy, rather than a process

225   of becoming newly abled. He equated recuperating what was lacking (the capacity to

226   walk) with better rehabilitation outcomes, fitting the ableist logic that favour legitimated

227   and standardized bodies (those that can stand) whilst discriminates against others (e.g.,

228   wheelchair users). As a strategy to maintain the narrative of progression to functional

229   recovery, Patrick tried to replace the wheelchair with a walker.

230   I used a walker, dragging my legs! The ambulance left me at the threshold of the

231   hospital door, well, in, let's say where the hospital gym was, and I went inside,

232   thud, thud, thud, dragging my legs as I could, uh, dude. Anyway, trying my best

233   to be able to walk again, that was my goal.

234

235   Walking (or dragging the legs) with the walker was a form of passing as an 'able

236   body'. Disability passing refers to the way people conceal social markers of impairment

237   (such as the wheelchair) to pass as 'normal' [35]. By avoid using the wheelchair to go

238   into the hospital gym, Patrick sought to pass as someone whose 'liberation' from the

239   wheelchair was, in his words, a question of *"patience, time, and hard work in the gym"*.

240   Over time, he worked out compulsively in different environments as a means to discard

241   the wheelchair and approximate independent functioning [Reference removed for

242   double blind review 2]. The following comment on the exercise routine that Patrick

243   followed in the personal gym is illustrative of how he lived enwheelment as an

244   individual problem to overcome and correct through will power.

245   For me the magic was to walk again. And that magic would come by what I did,

246   by my discipline, every morning [in the gym] and working out to the limit to

247   walk again (…) I would do 300 push-ups a day, in a series of 50… 50, urgh,

248   urgh, urgh! Man, I tell you, no wheelchair, …to my top, you know, …trying to

249   reverse the situation.

250

251   **It's not a part of me, but it is what it is**

10

Patrick was adamant in clarifying that the wheelchair was not, and will not

become, a part of him. He viewed the wheelchair as an instrument that provided him a

provisional solution to his bodily 'lack' or *"a temporary means of transport"*. When

asked about the reasons why he refused the wheelchair to be a companion all over his

disability journey, he said:

> My rejection of the wheelchair was given by the limitations that I understood it
>
> was going to produce if I stayed confined to it. Well, for example, I loved
>
> walking through the mountain or walking through the mountain with my kids.
>
> And the wheelchair was going to prevent me from doing that. Therefore, the
>
> chair was an obstacle to what I liked to do until that time. So I escaped from the
>
> chair because I wanted to do that again. Because I didn't want to stay confined
>
> to the chair again, given the physical limitations that it would produce in me.

Underlying this comment is the notion of the wheelchair as an obstacle to

accomplish restitution, as well as Patrick's assumption that his situation regarding

wheelchair use depended on his intentionality and free will. Through the years, Patrick

rejected the wheelchair "*because I was completely sure that I was going to walk again*".

However, the possibility of "*escaping*" from the wheelchair did not last forever. The last

(palliative) surgery, along with several conversations with doctors, convinced Patrick

that standing up and walk will be unviable for him: "*Now the tumour pinches the spine*

and does not let me walk again, so I begin to assimilate the idea… that this is going to

be definitive, long-term, man. Well, this is a big shock". This 'shock' represented a

bodily awareness and the subsequent assimilation of SCI, which led to a focus on

recovering from cancer and a reluctant acceptance of having become en-wheeled:

276   I am convinced I won't get rid of it anymore because of the circumstances …, I

277   slowly realised that my normal situation was the wheelchair now (…) the

278   wheelchair, well, it limits me, it fucks me up because I know that there are a

279   number of things I won't be able to do (…) but it is what it is.

280

281   Patrick resignedly assumed that he depended on the wheelchair then on. To

282   paraphrase Peers and Eales [36, p. 112], the wheelchair ended up being a necessary

283   solution to which Patrick became "*uncomfortably* dependent upon".

284

285   **Discussing Patrick's enwheelment and beyond**

286   For most people with SCI, wheelchairs are not a choice, but a consequence of

287   living with impairment. Wheelchair users become tangled in the human-wheelchair

288   assemblage (i.e., they become en-wheeled) notwithstanding their hopes and

289   expectations. Enwheelment, we argue, is a reality that proceeds regardless of whether

290   persons with SCI attend to it, or how they choose to make sense of it. Decisively,

291   enwheelment is underpinned by a posthuman ontology, which is faithful to the

292   reciprocal and distributed nature of agency. Seen in this light, people with SCI are

293   already cyborgs [7,37,38] and epitomise the posthuman condition where cyborg

294   connections are neither good nor bad, but unavoidably present [39,40]. This does not

295   mean that enwheelment is neutral for people experiencing it. Rather, this inexorable

296   process is compelling, and the way people respond, make plans and act towards it does

297   make a difference.

298   When the expectations, desires and experiences of wheelchair users do

299   harmonise with the posthuman condition inherent to enwheelment, the process of

300   becoming en-wheeled represents a celebration of connectivity, rather than a negation of

301 it. This is the case of several people who participated in a small but significant corpus of

302 studies on enwheelment [4,5,6,8,29,30,41]. To summarise, the majority of participants

303 from these studies emphasize that the wheelchair 'became part of them'. That is, they

304 became en-wheeled *with* the wheelchair. They established and reaffirmed a

305 communicative relationship with the wheelchair, developing a positive cyborg identity.

306 Mirroring Frank's idea of disability as a quest for developing a new self in meaningful

307 ways, these peoples' process of becoming en-wheelment were affirmative, non-tragic

308 [29].

309   As we showed, Patrick's enwheelment was distinct. Patrick became en-wheeled

310 *against* the wheelchair. Adapting Frank's [42] theorisation of the body problems in

311 action to human–non-human assemblages, this relationship with the wheelchair was

312 monadic in nature. That is, Patrick did not related to the wheelchair, but rather pushed it

313 away, using it as a negative reference; he lived among it, but not *with* it. In terms of

314 Patrick's embodied experience, the wheelchair was felt in the flesh as not a part of him,

315 but apart from him.

316   In the light of the foregoing, we interpret that Patrick lived a humanist-based

317 enwheelment. From a humanist lenses, wheelchair users become known and know

318 themselves in terms of what they are not (abled) and cannot do (walk). They are

319 "lacking subjects who might (if luck holds out) be made better through ableist

320 rehabilitation" [43, p. 235]. Notably, the humanist logic assumes that human beings

321 participate in a common essence, that they possess a set of essential attributes that

322 secure a human status. For example, walking would be considered part of normal

323 species functioning for humans. This essentialism generates an epistemic violence

324 against disabled people, excluding them from full human status [17,39]. To be

325 'humans', they need to fight against impairment and recuperate their essential capacities

326 (e.g., the capacity to walk). This essentialist (and ableist) notion of a species norm is

327 evoked in Straus' argument on the upright posture: 'Upright posture characterizes the

328 human species. Nevertheless, each individual has to struggle in order to make it really

329 his own. Man has to become what he is' [44, p. 534]. What this speaks to in the context

330 of this paper is that the restitution assemblage channels the humanist process of fighting

331 to recuperate the innate set of attributes or characteristics of the essential human that

332 have been troubled by impairment and, as Patrick pointed out, the wheelchair. This is

333 why, despite its emphasis on self-containment, independence and sovereignty,

334 humanism celebrates those human-non human assemblages as compatible with the

335 archetypal, able-bodied human. An instance of this is Patrick's acceptance of his

336 massive prosthesis as a part-of-me, in contrast of his rejection of the wheelchair.

337 **Positive and negative enwheelment: a continuum**

338 Above, we have invited to consider, first, that enwheelment is inherently

339 posthuman and, second, that it can be experienced in different ways depending on the

340 conceptions of agency, disability and the human of the person becoming en-wheeled. In

341 this consideration there are two key conceptions or logics doing a key work to shape the

342 experience of enwheelment, and therefore two different modes of becoming en-

343 wheeled. At first, we called them *humanist* and *posthumanist enwheelment*. These labels

344 were consistent with our theoretical reflections, and could be welcomed and gain

345 acceptance within certain academic circles, such as Disability Studies. Nonetheless, this

346 vocabulary might not be manageable and memorable for mainstream, professional and

347 non-specialised academic audiences. This is problematic, and points out the need of

348 'translating' the concepts in ways that are catchy and usable in different settings.

349 Therefore, we propose using the terms 'negative' and 'positive' as *nicknames* of

350 humanist and posthumanist enwheelment.

14

351   Importantly, these updated labels keep the soul of our theoretical approach.

352   'Negative' reflects the humanist view of enwheelment as a lack or a problem to be

353   solved, while 'positive' is linked with the "positive identity of impairment" [29, p.

354   1332] embraced by the "affirmative politics" of posthumanism [45].[ii] More importantly,

355   the labels 'positive' and 'negative' are accessible and invitational, and thus valuable for

356   sharing our key messages more effectively to readers, helping them to connect with

357   ideas productively, plug into them, and put them to work [46].

358   In spite of the greater potential of the terms 'negative' and 'positive' for

359   knowledge dissemination, as frequently occurs with 'everyday terms', we are conscious

360   that there is a danger of establishing an illusion of generalizable labels that can be used

361   uncritically across contexts [47]. In this sense, Buchanan [48, p. 458] cautioned against

362   a "plain language approach" to concepts, that is, assuming we know what words that

363   seem ordinary mean. To avoid misunderstandings, the concepts 'positive' and

364   'negative' enwheelment have to be situated in the onto-epistemological, political and

365   theoretical contexts that we have described in the paper. To facilitate and promote such

366   conceptual awareness, but also to take into account the range of variations that can

367   operate in between 'positive' and 'negative' enwheelment, we propose the following

368   continuum (Figure 2).

369

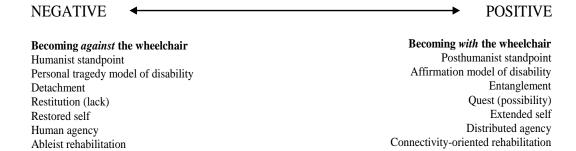| NEGATIVE ←————————————————→ POSITIVE	
Becoming *against* the wheelchair	**Becoming *with* the wheelchair**
Humanist standpoint	Posthumanist standpoint
Personal tragedy model of disability	Affirmation model of disability
Detachment	Entanglement
Restitution (lack)	Quest (possibility)
Restored self	Extended self
Human agency	Distributed agency
Ableist rehabilitation	Connectivity-oriented rehabilitation

370

371   **Figure 2.** A continuum of enwheelment

372

Within the proposed continuum, multiple 'relational modalities' (i.e., ways of

connecting to or disconnecting from the wheelchair) are possible [5]. These are not

permanent or definitive. Across time, a person can move across the continuum without

following a predetermined order [5]. This way, the continuum respects the idea that the

human body-wheelchair assemblage is a temporary, fluid and mobile connection that is

adjusted and modified depending on its connections with other agents and agentic

assemblages. Although the polarisation of the terms negative and positive suggests

archetypical modes of enwheelment, the continuum also allows understanding of

liminal or ambivalent zones, as well as overlapping cyborgification processes.

Let us pause here, for a moment, and consider the example of the Patrick-

Prostheses assemblage. As we indicated earlier, Patrick became *with* the prosthesis, but

he did so in order to achieve restitution and all that this involves. This shows that

cyborgification process can be positive *and* negative at the same time. We believe this

ambivalence is not a weakness of our theoretical frame. Rather, it signals the intricate

nature of cyborgification, and the utility of the continuum for sensing conflicts and

paradoxes. Therefore, another strength of the continuum is that it motivates reflection

on the complexities and nuances that enwheelment, and more broadly cyborgification,

entails.

Finally, it is worth clarifying that the continuum is not meant to be hierarchical

or evaluative. Quite the reverse, we reject any dichotomist, prescriptive or moral

temptation to cause a rift between good or preferable *positive* enwheelment, in contrast

to a wrong or bad *negative* one. In this regard, here we did not seek to condemn

rehabilitation practices focused on restitution, which makes significant strides in helping

people hold their own and, under certain conditions, help them to restore their body

16

397   close to its former, pre-injured state.

398   That being said, it can be argued that developing a positive relationship with the

399   wheelchair is important and necessary for disabled people in terms of flourishing and

400   living a good life in the long run. When disabled bodies need wheelchairs, they may

401   need to move away from the rigidity and narrowness of humanism and engage with

402   posthumanism, which means exploring new modes of being cyborg through interfacing

403   positively with the technologies to which they depend upon. This direction is taken by

404   critical posthumanist approach in an explicit and direct manner. As Braidotti [45, p.

405   134) put it, posthuman critical thought aims "at transformation of negative into positive

406   passions".

407   Such a transformation, however, is not straightforward. As Papadimitriou [6]

408   pointed out, becoming en-wheeled involves a constant challenge of negotiating,

409   reorganizing and reconfiguring one's way of being and doing. In this sense, it is also

410   worth noting that flourishing *with* the wheelchair is not only about meaning and about

411   accomplishment, but also includes hardships, limitation, and failure in the process [49].

412   Hence, people living with impairments may need to take their time to incorporate the

413   wheelchair [3,4], and perhaps acknowledge that becoming one with the wheelchair

414   straightaway post-SCI may be as unrealistic as quickly returning to their former, able

415   body.

416

417   **Conclusions and implications**

418   This paper has engaged with posthuman disability studies to provide

419   understanding about the process of becoming en-wheeled. Concretely, it has explored a

420   cyborg assemblage comprised by a man living with SCI and his manual wheelchair. The

421   article has offered insights into the ways in which the process of becoming en-wheeled

422 might be lived within the restitution assemblage. The Patrick-wheelchair coupling is

423 just a small part of the networks of humans and non-humans that form the restitution

424 assemblage. However, we have showed how focussing on this intimate assemblage may

425 help us to understand with more depth one of the many ways restitution is materialized,

426 and not just drawn as a story a person draws on to shape experiences. For example, we

427 have showed how restitution emplotted the wheelchair as a barrier to independence and

428 mobilised practices of ableist rehabilitation to break the cyborg assemblage formed

429 between Patrick and his wheelchair. Here, it is noteworthy that the use we have made of

430 the notion 'restitution'. Instead of applying restitution as simply a narrative resource, we

431 have articulated it as a more-than-human concept that helped us addressing both the

432 narrative and material forces that made up the realities of live for Patrick [Reference

433 removed for double blind review 2].

434 The analysis indicated that Patrick's process of becoming en-wheeled was

435 developed negatively (against the wheelchair), rather than positively (with the

436 wheelchair). The restitution assemblage was underpinned by a broader humanist logic

437 that disregarded connectivity. In contrast with much of the previous literature on the

438 process of becoming en-wheeled, Patrick's process was not oriented to fit himself and

439 the wheelchair together, but rather to divorce from the wheelchair and recuperate the

440 normative capacities of the able-bodied human (i.e., walking) that humanism regards as

441 essential. Deepening on this issue, our discussion derived in a continuum articulating

442 the notions of negative and positive enwheelment. We have already explained what the

443 continuum is, but it remains some important questions: For what and for whom is the

444 continuum useful? To do what? Our intention is that this theoretic frame could help

445 those who experience enwheelment and those who accompany them, mostly

446 practitioners, such as physiotherapists, rehabilitation workers, SCI support staff, and

447 other relevant health professionals, as well as disability scholars.

448   First, the continuum may prove useful for wheelchair users to know, name and

449 critically reflect on how enwheelment is affecting their lives, as well as to educate them

450 towards the potentialities of other ways of being and doing through enwheelment. For

451 example, a disabled person whose only reason to engage in a rehabilitation program was

452 avoiding the wheelchair was made aware of the humanist (essentialist and ableist)

453 nature of negative enwheelment, he/she may be prompted to do rehabilitation also as a

454 means to "feel the wheelchair", in line with a positive mode of enwheelment [3].

455   Second, using the continuum as a guide or reference can facilitate practitioners

456 recognising the potentials and perils in certain assemblages and helping clients to

457 incorporate assistive technologies in ways that support flourishing. In this sense, the

458 continuum may sensitise practitioners on their approach to rehabilitation practice,

459 including what is valued and discouraged, which in turn influences clients' "feeling of

460 dependency" [4]. It can do so because the ideas of positive and negative suggest an

461 ethical and practical question: which is the direction that enwheelment processes should

462 take? This thought-provoking question may act on professionals, demanding them to

463 adopt a position. Be that as it may, taking into account the posthumanist nature of

464 enwheelment (of both positive and negative enwheelment), rehabilitation practice

465 becomes not a relationship of assistance between an active practitioner and a passive

466 rehabilitation receiver, but rather a collective attention to the relationships –the

467 connections– that develop between the person, the wheelchair, and the surrounding

468 assemblages –such as restitution-. The theoretical frame we have proposed allows the

469 nature or these relationships to be quickly identified amidst the messy, complexity that

470 characterizes each varied personal process of becoming en-wheeled.

Finally, our theoretical frame might be useful for disability scholars willing to examine enwheelment and, more broadly, different modes of cyborgification or human-non human assemblages involving different contexts (e.g. sport), populations (e.g. elderly people), impairments (e.g. cerebral palsy) and disability artifacts (e.g. assistive listening devices). This is not though to impose the interpretations suggested here onto people or their research. Nor is it an attempt to equip readers with a one-size-fits-all theoretical model. Rather than aspiring to offer the final word on enwheelment or other cyborgification processes, the present study seeks to encourage curiosity in the reader and inspire dialogue. In this sense, the paper stands out for its potential for heuristic significance [2] that is, for moving people to further explore, research, or act on the research in the future.

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ⁱ We use italics and inverted commas to insert Patrick's voice in the text.

ⁱⁱ In our theoretical proposition, the notion of positive enwheelment is not linked to the positive psychology approach, which often depoliticises disability and promotes an individualistic vision of human flourishing. Contrariwise, it draws on the posthuman critique of humanist individualism, meaning that it challenges the negative connotation of dependency and injects a positive view on our relational existence.