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The term 'cyborg', a portmanteau word coined by Clynes and Kline in 1960 to describe the *cybernetic* adaptations necessary to enable *organisms* to live in space, has since come to refer to any being that is part organism, part machine – a definition that would certainly apply to individuals with implanted cardiac devices. *Resilient Cyborgs: Living and Dying with Pacemakers and Defibrillators*, by Nelly Oudshoorn, draws upon recent feminist post-humanist studies to fill the gaps left by (and dispel the myths created by) traditional cyborg studies.

Literary and cultural approaches to cyborg studies, by focussing on the fictional and metaphorical, have exacerbated the stereotypical view of cyborgs as male, devoid of emotion and monstrous. Medical and psychological discourses, by focussing on the agency of the medical technology, have traditionally rendered human recipients as passive. Both fields have thus occluded the actual lived experiences of real-life cyborgs. By bringing the voices and experiences of 'wired heart cyborgs' into the discussion, Science and Technology Studies (STS) scholar Oudshoorn sets out to foreground the materiality of the body, the agency and identity of device recipients, and the work involved in becoming and remaining a resilient cyborg.

While Oudshoorn's book could be used as a heuristic to consider other implantable technologies, the specific focus on pacemakers and defibrillators enables exploration of the active human engagement required to manage lifelong co-existence with a potentially life-saving device that operates under its own agency and outside the will of its recipient. Despite the irrefutable agency of such devices, Oudshoorn rejects the resultant passive role often assigned to recipients and, with frequent reference to the concept of 'everyday cyborgs', argues that living with a pacemaker or implantable cardioverter-defibrillator (ICD) requires 'active involvement' in the constant reinvention of the everyday and 'thus should be considered as an achievement' (p. 18). Oudshoorn's 'techno-geographical' approach posits that pacemakers and ICDS are not (as information distributed to patients might suggest) isolated technological devices, but are rather 'embedded in a larger infrastructure of care', depending on 'the active involvement of different actors, including everyday cyborgs' (p. 47). Oudshoorn is therefore able to address the complex infrastructure of responsibility, considering various social and power relations across a range of settings: hospital, home, work, airports, etc.

Oudshoorn's use of interviews with wired heart cyborgs and their associates, along with her intersectional approach to identity as the interaction of a range of culturally constructed differences, is often very successful at exemplifying the individuality of experiences and how these might vary from cyborg to cyborg. Actively foregrounding

intersectional differences such as gender enables Oudshoorn to 'correct the image' (18) that wired heart cyborgs must be male, for example. In fact, when it comes to ICD implantation, wired heart cyborgs *are* most often male and, with no known medical reason for this gender imbalance, the study and representation of non-imaginary (and female) cyborgs is vital and long overdue.

Oudshoorn's book does give a rich and nuanced overview of many individuals' experiences of becoming resilient cyborgs, but omits the consideration of differences other than age or gender that, says Oudshoorn, are equally relevant, for example race and disability. While Oudshoorn suggests the book's intersectional approach provides a heuristic to address these other differences (p. 319), I hope they are given due and direct consideration in future publications on the topic, as the persistent assumption that cyborgs will be white and able-bodied remains to be corrected.

In the final part of the book, *How Hybrid Bodies Fall Apart*, the consideration of end-of-life care demonstrates the distress that can be caused by misperceptions concerning cardiac devices, for example when medical communication prioritises the explanation of these devices' methods of prolonging life, thus excluding discussion of the devices' potential role in a so-called good death. Oudshoorn relates several accounts of unnecessary anxiety and suffering due to patient or physician misunderstanding around the possible impact of devices at end of life.

The concluding discussion of the practicalities and legislation relating to the removal, recycling or reuse of devices after death, while fascinating, was, I felt, slightly incongruous in tone with the preceding chapters, and ran the risk of undermining the book's portrayal of wired heart cyborgs as vital and active participants in the technogeography of resilience.

Nevertheless, I found *Resilient Cyborgs* to be an excellent discussion of the shared work required in order to live (and die) with a pacemaker or defibrillator. Oudshoorn is particularly successful in placing patient experience and expertise front and centre, without ever under-(or over-)stating the role of medics, technicians, friends and family, society and politics. As a young, female wired heart cyborg myself, I frequently found my own experiences reflected in the book (a rare occurrence) but also encountered many new-to-me aspects of life with a cardiac device.

With the introduction in recent decades of so many technologies that operate under the surface of the body (cochlear implants, spinal cord stimulators, etc.), Oudshoorn argues that 'understanding the agency, vulnerabilities, and resilience of people living

as cyborgs has become even more urgent' (p. 11). *Resilient Cyborgs: Living and Dying with Pacemakers and Defibrillators* begins to render visible the work involved in keeping hybrid bodies alive and, in doing so, can prepare individuals, institutions and society 'for what needs to be done in order to live and die with technologies that operate under the skin' (p. 307).