

The body of law: boundaries, extensions, and the human right to physical integrity in the biotechnical age

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ABSTRACT

The body is precondition of human existence and reference point of many legal norms. But the law only rarely asks what the body is more precisely. Answers might appear evident, but commonsensical conceptions of the body have been cast into doubt by feminists, artists, and disability theorists. Drawing on polyphonic arguments, they suggest social or post-human reconceptualizations with potential legal implications. Civil rights activists call for better protection of cyborg bodies; some legal scholars suggest redefining or even dismissing the right to bodily integrity because of its uncertain foundations. Of particular importance is the question of the boundaries of the body because the legal treatment of prostheses and assistive devices depends on whether they are part of it. This paper analyzes these boundaries with a focus on the right to bodily integrity, in light of the jurisprudence of the European Court of Human Rights and the foundational legal distinction between persons and things. It argues that bodies indeed have multiple boundaries, but none of them qualifies for legal purposes. The law must thus draw normative boundaries. Against the temper of times, it should resort to a naturalistic conception because it accommodates interests of stakeholders in the best way.

For human creatures, having a body and being embodied are necessary conditions of existence. It is therefore not surprising that the body is a central object of human rights protection as well as legal regulation. Various norms pre- and proscribe conduct with bodies, ranging from inflicting physical harm to consent and rules about various medical procedures. The body has been, and still is, a site of contestation, of political struggles, and civil rights litigation. Some international norms directly refer to the

body, such as Art. 3 of the European Charter of Fundamental Rights and Freedoms (ECFR) and Art. 17 of the Convention on Rights of Persons with Disabilities (CRPD), commanding ‘respect for physical and mental integrity’.¹ Many further references to the body are found in domestic constitutions, provisions of criminal and tort law, and the jurisprudence of courts throughout the world.

But what is the body, in a legal sense? The answer might appear obvious: the biological entity of blood, bones, and flesh. However, such a naturalist conception of the body as a single entity distinct from the environment has been called into question—some would say, it has been deconstructed—by a variety of voices since the 1980s.² To name a few: technology scholars emphasize that bodies cannot be understood as separated from the technologies that sustain and shape them. Walking sticks, glasses, and nutrition are some examples of the material foundations and scaffoldings of the body; bodies and technologies co-emerge (‘technogenesis’).³ Feminist writers object to essentialist views of a natural (female) body and point to the arbitrariness of the distinction between the natural and the technological. This distinction might also be viewed as discriminatory through a disability lens:⁴ if biological limbs are considered as part of the body whereas technological limbs are not, two forms of a limb are treated unlike, which might disadvantage technological and atypical types of embodiment and disabled persons. Moreover, the mere fact that bodies are increasingly supplemented with or extended by biotechnologies, from artificial joints and cardiac pacemakers to cochlear implants and brain stimulators, casts doubts on simple naturalist views. In the biotechnical age, so it is said, bodies become ‘assemblages’ of different materials, blending the organic and the inorganic, biology and technology, and increasingly algorithmic code and mental functions.⁵ Already Freud remarked that man has ‘become a kind of prosthetic God’ through his ‘auxiliary organs’, namely tools.⁶ A century later, the ‘merging of man and machine’ has advanced to a stage in which many people in the Western world have become ‘everyday cyborgs’ as their bodies are enmeshed with non-biological substances and technologies.⁷

1 Terminological note: ‘physical’ and ‘bodily’ are used interchangeably, and so are ‘thing’ and ‘object’.

2 Because of the supposed impossibility to conceive of the body as a single conceptual entity, it has become commonplace in sociology to speak of ‘bodies’ in the plural. *THE BODY: A READER*, (Mariam Fraser & Monica Greco eds., 2005).

3 DON IHDE, *BODIES IN TECHNOLOGY* (2002).

4 This paper uses ‘ableist’ language, eg Gregor Wolbring, *The Politics of Ableism*, 51 *DEVELOPMENT* 252–258 (2008). Although criticisms of ableism are intriguing, normative arguments in the present area require notions such as disability, impairment, or functioning. In the framework of human rights law, they do not express a diminution of persons but trigger positive obligations to assistance and accommodation. If people just had diverse abilities, none better than the other, duties of governments and society in virtue of deficient abilities become unintelligible. This view does not fail to notice that disabilities are often socially made or facilitated.

5 Neurotechnologies running on artificial intelligence create human minds fed by two hardware systems, the brain and neurotechnology. The emerging entity has been called ‘hybrid minds’ by Surjo Soekadar et al., *On The Verge of the Hybrid Mind*, 1 *MORALS & MACHINES* 30–43 (2021).

6 Sigmund Freud, *Civilization and its Discontents*. In: *THE STANDARD EDITION OF THE COMPLETE PSYCHOLOGICAL WORKS*, Volume XXI, London 1981, p92.

7 Muireann Quigley & Semande Ayihongbe, *Everyday Cyborgs: On Integrated Persons and Integrated Goods*, 26 *MEDICAL LAW REVIEW* 276–308 (2018); Jens Clausen, *Man, machine and in between*, 457 *NATURE* (2009); CASSANDRA CRAWFORD, *PHANTOM LIMB: AMPUTATION, EMBODIMENT, AND PROSTHETIC TECHNOLOGY* (2014). Imogen Goold, Hannah Maslen, & Cressida Auckland, *DAMAGE TO PROSTHESES AND*

This raises questions about the legal status of these assemblages: What counts as part of the body and what is merely a thing? Obvious answers might no longer work. The legal scholar Bert-Jaap Koops argues:⁸

Traditional distinctions between physical and non-physical modes of attack, between human bodies and things, between exterior and interior of the body—which all derive from the assumption that the human body is physically separate from its environment and hence that ‘body’ is a convenient boundary-marking concept to distinguish between levels of intrusiveness—need to be re-interpreted.

Along similar lines, some scholars criticize the right to bodily integrity because of the conception of the body on which it operates.⁹ The paradigmatic technologies pushing and blurring boundaries between persons, things, and bodies are implants, prostheses, and assistive devices. They are the focus of this paper (and henceforth summarily called ‘devices’). Some of these technologies advance rapidly. For instance, contemporary bionic limbs are often integrated with the nervous system, and some prototypes even afford the restoration of a basic sense of touch. Exoskeletons are becoming complex objects, some are almost like a second corpus, and others are directly connected to and controlled by the brain, bypassing the peripheral nervous system. These technologies are used primarily in the context of disabilities, but sometimes beyond it, eg by athletes, biohackers, artists, and others.¹⁰ It seems likely that some will be widely used as everyday artifacts in the way glasses are used today. As the performance artist Stelarc remarks, prostheses are no longer a sign of a lack, but a symptom of excess.¹¹

These devices may also become the focal point of political contestations regarding the boundaries of the body. Some wearers of prostheses (‘users’) experience them as part of their body and demand their legal recognition as such. This ties in with more general calls for reimagining and redrawing the moral and legal boundaries of the person, echoing an often-cited rhetorical question by Donna Haraway: ‘Why should our bodies end at the skin, or include at best other beings encapsulated by skin?’¹² Civil rights activists demand more robust legal protection for modifications and extensions

COMPENSATION FOR HARM, (unpublished manuscript). Donna Haraway, *A Cyborg Manifesto*, in HARAWAY, DONNA. SIMIANS, CYBORGS, AND WOMEN: THE REINVENTION OF NATURE. 149–181 (2013) coined the phrase ‘we are all cyborgs’. That the blending with technology is part of human nature argues ANDY CLARK, *NATURAL-BORN CYBORGS: MINDS, TECHNOLOGIES, AND THE FUTURE OF HUMAN INTELLIGENCE* (2003).

- 8 Bert-Jaap Koops, *On Legal Boundaries, Technologies, and Collapsing Dimensions of Privacy*, POLITICA & SOCIETÀ 247–264 (2014).
- 9 Gowri Ramachandran, *Against the Right to Bodily Integrity: Of Cyborgs and Human Rights*, 87 DENVER UNIVERSITY LAW REVIEW 1–57 (2009); Adrian M. Viens, *The Right to Bodily Integrity: Cutting Away Rhetoric in Favour of Substance*, in THE CAMBRIDGE HANDBOOK OF NEW HUMAN RIGHTS 363–377 (Andreas von Arnould, Kerstin von der Decken, & Mart Susi eds., 2020), Theodore Bennett, *Locating the Body in ‘Bodily Harm’*, 45 WESTERN AUSTRALIA LAW REVIEW 37–64 (The ‘law’s current conception of the body as flesh, blood and bone that are neatly bounded by the skin, does not provide a satisfactory account of the increasingly malleable and interconnected body of the 21st century’, p38). Sean Aas, *Prosthetic Embodiment*, SYNTHÈSE (2019). Cf. Woodrow Barfield & Alexander Williams, *Law, Cyborgs, and Technologically Enhanced Brains*, 2 PHILOSOPHIES 6 (2017); Linda MacDonald Glenn, *Case study: Ethical and Legal Issues in Human Machine Mergers (Or the Cyborgs Cometh)*, 21 ANNALS OF HEALTH LAW 7.
- 10 See writings of pioneers such as Kevin Warwick, *Homo Technologicus: Threat or Opportunity?*, 1 PHILOSOPHIES 199–208 (2016); I, CYBORG (Illinois 2004).
- 11 Stelarc, *Circulating Flesh*. Lecture at the University of Warwick, June 18, 2011 (unpublished).
- 12 Haraway, *supra* note 7 at 314.

of bodies, eg through the colorful ‘morphological freedom’¹³, guaranteeing the liberty to alter the workings and ‘gestalt’ of bodies, or through enhanced protection against involuntary disconnection of users from prostheses (‘freedom from disassembly’).¹⁴

The legal conception of the body, its boundaries, and the scope of its protection thus require clarification. This is the aim of this paper. After the presentation of some exemplary cases (I), it outlines the right to bodily integrity and the case law on prostheses by the European Court of Human Rights (ECtHR) (II). The discussion of the paper is premised on two axioms: The extraordinary value of the human body, and the legal dichotomy of persons and things, often overlooked in discussions outside of the law (III). Potential boundary criteria of the body such as materiality, functionality, or phenomenological embodiment are surveyed (IV). Their relevance for the law is subsequently assessed in light of recent critical writings on the right to bodily integrity and diverging interests of stakeholders (V). This analysis provides the basis for the proposed interpretation of ‘body’ and the right to ‘bodily integrity’ (VI). In a nutshell: bodies lack a fixed ontological boundary; they have multiple boundaries. As a result, the law has to draw a normative boundary. Contrary to contemporary writings, a naturalist view of the human body, restricted to flesh and blood and ending at the skin, seems to be preferable, all things considered. No argument compels the law to revise its conception of the body, or the distinction between things and persons. But there is room for improving the rights of users nonetheless.

I. EXEMPLARY CASES

A few stylized cases may illustrate the boundary problem and serve as reference points in the discussion.

Case 1: Colorblind from birth, the artist Neil Harbisson invented a sensory prosthesis, the ‘eyeborg’, that detects colors and transforms them into sound. It consists of an antenna with a camera mounted on the head, firmly implanted in the skull and osseointegrated with the bone. It generates vibrations in the skull which wearers perceive as sounds. The eyeborg thus enables users to hear colors; it creates a synesthetic experience, partially substituting a natural sense, and partially creating a novel one. The device has been provided to colorblind people worldwide. Harbisson’s request to wear the eyeborg in his passport picture was reportedly denied by UK authorities.¹⁵

Other sensory prosthetics such as the ‘eyetap’, wearable glasses, record what the user is seeing (akin to google glasses). Its inventor was violently assaulted by people not wanting to be filmed in public.¹⁶

Case 2: Recent media reports featured a manufacturer of retinal implants that discontinued their support. As a result, when devices had broken down, the users lost their ability to see.¹⁷

13 Cf. the Transhumanist Declaration (2012), repr. in: *THE TRANSHUMANIST READER* (Max More & Natasha Vita-More eds., 2013) and Anders Sandberg, *Morphological Freedom—Why we not just want it, but need it* 56–64 therein.

14 Cyborg Foundation, *CYBORG BILL OF RIGHTS*, 2016. www.cyborgfoundation.com [accessed Sep 25, 2022].

15 Interview with Stuart Jeffries, *The Guardian*, May 6, 2014. <https://www.theguardian.com/artanddesign/2014/may/06/neil-harbisson-worlds-first-cyborg-artist> [accessed Sep 25, 2022]; Benjamin Wittes & Jane Chong, *Our Cyborg Future: Law and Policy Implications*, BROOKINGS INSTITUTE REPORT, 10 (2014).

16 *Id.*, p. 11.

17 Eliza Strickland/Mark Harris, *Their Bionic Eyes Are Now Obsolete and Unsupported* <https://spectrum.ieee.org/bionic-eye-obsolete>, Feb. 15, 2022 [accessed Sep 25, 2022].

Case 3: A quadriplegic patient requires a specially designed and technologically sophisticated wheelchair for basic mobility.¹⁸ While he was seated in a regular chair during a flight, the wheelchair was damaged by airline staff due to mishandling. Repairs took 11 months during which the patient was essentially bedridden. The airline offered U\$ 1500 in compensation, the maximum amount of contractual liability for damage to property. Might damaging the wheelchair constitute physical harm, allowing much higher damages?

Case 4: A paralyzed person who uses a wheelchair participated in a blockade. The police took him into custody and dismantled the wheels as they carried him into the police van.

Case 5: Research study participants often regret having to return prostheses after study completion. Can they deny this as the prostheses have become part of their body?

Many such cases are conceivable. While they are primarily issues of domestic law that hinge on details in the wording of torts or criminal offenses, they also touch upon legal principles because answers depend on whether the prostheses are things or part of the body.

II. BODIES, PROSTHESES, AND RIGHTS

Two axioms form the foundation of the following inquiry and will be addressed in turn. (i) Bodies are of extraordinary value and enjoy strong legal protection; (ii) for the law, bodies and things are categorically different. The reasons for the first axiom are self-evident. For humans, the body has a special status; it is the medium through which we are in the world. Unlike things, biological bodies are not replaceable; they age, need time to heal and recover; they are the site of the inherent vulnerability of persons. Human rights law reflects this by protecting bodies more strongly than things, which is one reason for the relevance of the distinction between bodies and things. More broadly, and with some exceptions, the boundary of the body delineates the private and the public realm; it marks a sphere of privacy largely outside the reach of governmental control, succinctly expressed in slogans such as ‘my body, my choice’. Moreover, bodies are often the borders of consequentialist considerations: While most things can legally be appropriated for the greater good, most jurisdictions shy away from harming or sacrificing bodies for the sake of others. Many do not even allow compulsory taking of blood, let alone organs, to save the lives of others, even if, all things considered, benefits far outweigh harms.¹⁹ The reluctance in many countries to impose mandatory vaccinations to end a global pandemic also attests to the importance of integrity of the body. Moreover, rights to the body do not seem to be acquired; if there is any ‘natural right’, it is likely the one to control and preserve one’s body.²⁰ Bodies thus enjoy

18 Glenn, *supra* note 10.

19 Drawing blood for an alcohol test is a different matter as it concerns evidence and law enforcement, and even that faces limits, see *Birchfield v North Dakota*, 136 S. Ct. 2160 (2016). For a view against ‘body exceptionalism’, see CÉCILE FABRE, *WHOSE BODY IS IT ANYWAY? JUSTICE AND THE INTEGRITY OF THE PERSON* (2006).

20 To some, the experience of the vulnerability of the body grounds the entire human rights system. See ANNABELLE MOONEY, *HUMAN RIGHTS AND THE BODY: HIDDEN IN PLAIN SIGHT* (2014). To others, it is the forgotten anthropological basis for public bioethics, O CARTER SNEAD, *WHAT IT MEANS TO BE HUMAN: THE CASE FOR THE BODY IN PUBLIC BIOETHICS* (2020).

extraordinary legal protection. However, it is not absolute and might be outweighed by countervailing rights or interests.

II.A. The Human Right to Bodily Integrity

The human right to physical integrity reflects the exalted status of the body. Although not explicitly enumerated in the Universal Declaration of Human Rights (UDHR), it is entailed by the guarantee of the security of the person, Art. 3 UDHR,²¹ as well as Art. 9 of the Convention on Civil and Political Rights.²² It is codified in Art. 5.1 of the American Convention on Human Rights and subsequent instruments, eg Art. 17 CRPD and Art. 3.1 ECFR. It is well established in the jurisprudence of the ECtHR on Art. 8 ECHR, many domestic constitutions, and counts as a cornerstone of common law.²³

The philosophical basis of the right is not fully settled, although less controversial than it sometimes appears. Accounts in the wake of Locke hold that persons own their bodies analogous to property in things.²⁴ Others object to the analogy with property and suggest a ‘sui generis’ right to the person from which rights to bodily sovereignty and integrity derive. Both positions have something to recommend. The latter captures concerns about the commodification of the body and explains why persons cannot sell themselves into slavery. It ensures that bodies, and parts thereof, become objects of property and be subjected to the pressures and incentive structures of capitalism. By contrast, the Lockean view more easily explains why people own the fruits of their labor—they own their bodies and everything they produce—and why people may have property in body parts and bodily tissue once they become detached from the rest of the body. The following discussion can remain uncommitted. Both views endorse strong protection of the human body; neither calls the importance of the body into question nor provides guidance about its boundaries.

The ambit of the human right to bodily integrity is complex as many controversial questions fall under it. Generally speaking, the law does not make its conception of the body explicit; it seems to assume a simple naturalist view. But, this may change if good reasons demand so. The right to bodily integrity is a classic negative right against non-trivial adverse interferences. Unwanted ‘intrusions’ into and ‘injuries’ of the body above a ‘de minimis’ threshold qualify. This comprises infliction of pain, skin or tissue damage, and detriments to (physical) health and bodily abilities.²⁵ Removal of implants regularly interferes with bodily integrity (eg incision of skin).

21 THE UNIVERSAL DECLARATION OF HUMAN RIGHTS: THE TRAVAUX PRÉPARATOIRES, 1408, 1454, 2237 (William Schabas ed., 2013).

22 HR Committee, General Comment No. 35, UN Doc. CCPR/C/GC/35; ‘The right to security of person protects individuals against intentional infliction of bodily or mental injury’. It also ‘obliges states . . . to protect individuals from foreseeable threats to life or bodily integrity proceeding from governmental or private actors’ (at 9).

23 Jonathan Herring & Jesse Wall, *The Nature And Significance Of The Right To Bodily Integrity*, 76 C.L.J. 566–588 (2017).

24 Meredith Render, *The Law of the Body*, 62 EMORY LAW JOURNAL 549–604 (2013); ROHAN J. HARDCASTLE, *LAW AND THE HUMAN BODY: PROPERTY RIGHTS, OWNERSHIP AND CONTROL* (2007).

25 EU NETWORK OF INDEPENDENT EXPERTS ON FUNDAMENTAL RIGHTS, COMMENTARY OF THE CHARTER OF FUNDAMENTAL RIGHTS OF THE EUROPEAN UNION 36 (2006), Right to Respect for Private and Family Life, in P. VAN DIJK ET AL., *THEORY AND PRACTICE OF THE EUROPEAN CONVENTION ON HUMAN RIGHTS* 690 (Fifth edition, 2018).

Less clear is the extent to which the right also encompasses a ‘transformative’ dimension beyond the preservation of the status quo, ie a liberty to modify one’s body even if detrimental to integrity (eg cosmetic surgery, tattoos, and ‘body hacking’). The liberty to modify one’s body is an aspect of the called-for morphological freedom and might be described more familiarly as an aspect of bodily autonomy. Bodily integrity and autonomy are often used interchangeably, but this is imprecise as both differ in a norm-theoretical perspective. A right to the integrity of X primarily provides claims to non-interference with the integrity of X; it does not necessarily include the liberty to modify an intact X. Autonomy is broader than integrity. However, this point of normative logic cannot prejudice the substantive question of whether the right to bodily integrity *ought* to comprise the liberty to transform one’s body. The general legal principle of autonomy, a cornerstone of human rights law and liberal legal orders, speaks in its favor.²⁶ In this vein, the ECtHR held that medical examinations without consent might violate Art. 8 ECHR even in the absence of physical harm.²⁷ The right to make transformative decisions about one’s body may well be considered a human rights principle despite norms speaking about integrity only. In this sense, the law as it stands already recognizes a basic version of morphological freedom. Rather than its existence, its limits are contested. Bodily autonomy is curbed primarily with respect to dangerous activities for paternalistic and other reasons. But the strength of the right is outside of the focus of this inquiry. Thus, as a first result of the present analysis, a right to morphological freedom understood as the right to transform one’s body is in principle accepted in human rights law while its strength and limits are controversial. Accordingly, everyone has a *prima facie* liberty to use prostheses such as eyeborgs and eyetaps.

II.B. Battery and Boundaries

A central aim of this inquiry is an adequate demarcation of the boundaries of the body. The common law norm of battery might be illuminating. It guards bodily boundaries by outlawing unwanted contact. Some jurisdictions extend this protection to prostheses and other things. In US tort law, battery does not require actual touching of the body, contact with clothing, or items intricately connected to bodies suffices.²⁸ The Second Restatement of Torts explains the rationale:

The ‘essence of the plaintiff grievance consists in the offence to the dignity in the . . . invasion of the inviolability of the person and not in any physical harm done to his body, so it is not necessary that plaintiffs actual body be disturbed [. . .] Contacts with anything so connected with the body as to be customarily regarded as part of the other’s person and therefore as partaking of its inviolability is actionable as an offensive contact with his person. There are some things such as clothing or a cane or, indeed, anything directly

26 *Pretty v the United Kingdom* (App. 2346/02, 19.04.2002).

27 *YF v Turkey* (App. 24209/94, 22.07.2003) involved an unwanted intimate gynecological examination. That interferences with integrity may not require harm to substance is expressed by Art. 3.2 ECFR, stipulating the requirement for consent ‘in the fields of medicine and biology’. Reversely, even if physical effects exist, they have to be of a serious nature to come into the scope of Art. 8, eg, *Costello-Roberts v UK* (App. 13134/87, para. 35).

28 *Fisher v Carrousel Motor Inc.*, Supreme Court of Texas, 424 S.W.2d 627 (1967); JOHN C. P. GOLDBERG & BENJAMIN CHARLES ZIPURSKY, *THE OXFORD INTRODUCTIONS TO U.S. LAW. TORTS* 198 (2010).

grasped by the hand which are so intimately connected with one's body as to be universally regarded as part of the person.²⁹

That battery can be committed without touching the 'actual body' might suggest that the boundaries of the legal body are broader than it. On a close reading, however, the Restatement draws a distinction between things as part of the 'person' and the 'body'. Clothing or canes are part of the former but not the latter. This understanding does not broaden the boundaries of the biological body but extends the scope of inviolability of the person to non-bodily objects.

II.C. International Norms on Prostheses

Further international norms relate to prostheses and assistive devices. Most importantly, the CRPD obliges member states to promote research and provide access to devices for disabled persons such as eyeborgs and eyetaps (eg Art. 4g, Art. 9, Art. 20 CRPD). These norms support a right of disabled persons to use such devices.³⁰ At least: if states were to restrict their use, they would run afoul of their international obligations. Prostheses emerged in a handful of cases before the ECtHR, mainly in the context of confinement and alleged violations of Art. 3 ECHR (inhuman and degrading treatment). In *Vasilyev v Russia*, the imprisoned applicant suffered from movement limitations and discomfort because of an amputated foot. The prison failed to provide him with proper orthopedic footwear for 6 years. The Court found this to exceed the unavoidable level of suffering inherent in detention.³¹ The Court reached the same verdict in *Arutyunyan v Russia* in which a wheelchair-bound person was held on the fourth floor of a prison without a lift.³² As necessary facilities were on the ground level, the applicant had to climb stairs with assistance several times a week.³³ These rulings did not require a closer interpretation of the concept of the body or its limits. But a topical remark is made in *Price v United Kingdom*. The 'four-limb deficient' and wheelchair-bound applicant was committed to prison for 7 days. The prison denied her request to bring the battery charger for her wheelchair. She was placed in a facility not suited to meet her special needs for washing and toilet. The ECtHR unanimously found this in violation of Art. 3 ECHR. Judge Greve wrote in a separate opinion:

compensatory measures come to form part of the disabled person's physical integrity. It follows that, for example, to prevent the applicant, who lacks both ordinary legs and arms, from bringing with her the battery charger to her wheelchair when she is sent to prison for one week, or to leave her in unsuitable sleeping conditions so that she has to endure pain and cold [...] is in my opinion a violation of the applicant's right to physical integrity.³⁴

29 American Law Institute, § 18 Comment p 31.

30 Grounding novel rights of individuals in conventions is problematic for several accounts. The CRPD is said to 'not create any new rights' but to clarify existing ones, but that is a matter of debate (UN High Commissioner for Human Rights, UN Doc. A/HRC/4/75 at 18). Andrea Bertolini, *Robotic prostheses as products enhancing the rights of people with disabilities. Reconsidering the structure of liability rules*, 29 INTERNATIONAL REVIEW OF LAW, COMPUTERS & TECHNOLOGY 116–136 (2015).

31 *Vasilyev v Russia* (App. 28370/05).

32 *Arutyunyan v Russia* (App. 48977/09).

33 Cf. *Zarzycki v Poland* (App. 15351/03, 12.03.2013), where the Court did not find a violation for lack of supplying a 'precision prosthesis'.

34 *Price v UK* (App. 33394/96, at 13, italics in orig.), cf. *Engel v Hungary* (App. 46857/06).

The first sentence of the quote might be read as stating that the wheelchair ('compensatory measure') is ('form') a part of the body *sensu stricto*.³⁵ But the verdict of the second sentence may also be reached by an alternative reading. One may say that *taking away* a compensatory measure causes a person to be in a dysfunctional state, and *withholding a compensatory measure* which one is obliged to provide may equally do so. Such conduct interferes with the right to bodily integrity. This reading does not require the wheelchair to be part of the body for its withdrawal to constitute an attack on bodily integrity.

II.D. Indirect Interference Argument

Let us call this the *indirect interference argument*. It might provide the key to a plausible construal of the right. Damaging or withholding a device that restores bodily functions or alleviates dysfunctions might (under further conditions) interfere with the right to bodily integrity—although the device itself is 'not' part of the body. Consider the analogous case of medication. Suppose someone takes away the Insulin of a diabetic who suffers physical harm as a result. Provided other medications are unavailable, taking the insulin may constitute infliction of bodily harm without presupposing medications to be part of the body. It is thus possible to interfere with the integrity of the body without direct contact, by taking away therapeutic or assistive devices or withholding them (an omission presupposing a positive duty to provide them). The missing battery charger in *Price* rendered the wheelchair defective and placed the applicant in a state without ordinary functioning. In this indirect manner, immobilizing the wheelchair interfered with her physical integrity. The indirect argument allows plausible results without expanding the concept of the body to wheelchairs or battery chargers.

Two objections might be raised. First, strictly speaking, the defective wheelchair did not strip the applicant of any functional ability because she was unable to move without it before. Only by conceiving the wheelchair as part of her can its damage affect bodily integrity. However, in reply, moving one's body can be conceived as an ordinary, species-typical function of the human body. This sets the benchmark. Every action that weakens or eliminates such functions of another person, whether occasioned through biological or artificial limbs or wheelchairs, might interfere with ordinary functioning, and thereby, bodily integrity.³⁶ The challenge is that this reasoning might be too broad as it may apply to cars, elevators, and other things conducive to restoring ordinary functioning. To avoid absurd consequences, the scope of indirect interferences must be narrowed preferably to clearly identifiable things assisting ordinary functioning. A tentative suggestion is that only some devices qualify; persons must have the factual opportunity to reliably and rightfully use it. Rendering these devices defective so that the person loses ordinary functioning may interfere with the right to bodily integrity. Note also that the scope of the *right* to physical integrity may not neatly correspond to the extent of the biological body (cf. the reasoning in *battery*). The interferences with wheelchairs in Cases 3 and 4 may thus—in line with Judge Grewe's remark—interfere with bodily integrity. It is a separate matter whether they also qualify under

35 Some commentators seem to do so, eg Herring and Wall, *supra* note 23.

36 Note that this is not an exhaustive definition of the scope of bodily integrity and does not exclude other established categories not requiring setbacks to ordinary functioning.

more specific provisions, such as domestic criminal offenses requiring harm to bodily substance, which might be narrower. In abstract, it seems possible to conceive damage to the wheelchair in Case 3 as personal injury. Discontinuing technical support for an implant, Case 2, may interfere with bodily integrity (by omission) if the company was under a duty to continue it, a matter of contractual obligations and medical device regulation.

Another objection might state that reference to ordinary functioning is normatively laden and has the corollary that only people short of such functioning are protected. This is true but does not undermine the argument. Legal norms routinely refer to standards or thresholds; establishing rules about permissible conduct is inherently a normative enterprise.³⁷ Respecting ordinary functioning seems to be a prime candidate for the scope of the right to bodily integrity. As a consequence, taking away the bike of a fully abled person is theft, whereas taking away the wheelchair of a disabled person may also interfere with bodily integrity.

After all, neither battery nor the jurisprudence of the ECtHR provide clear criteria for boundaries of the body and indicate some flexibility in constructions. This leads to the second finding of this discussion: through the indirect argument, damaging assistive devices that people can reliably and rightfully use may interfere with bodily integrity without presupposing devices to be part of the body.

III. THE INALIENABILITY OF THE BODY

The second axiom that ground this discussion is the dichotomy between persons and things. As they are mutually exclusive legal categories, entities can only belong to one of them at a given point in time. Although not expressively laid down in human rights law, this dichotomy is a legal principle traceable to Roman law (which distinguished claims ‘in rem’ and ‘in personam’).³⁸ Persons are holders of rights and duties, the *subjects* of law, whereas things are the *objects* of those rights and duties. Things are mainly regulated by the laws of property. They may differ between jurisdictions, but some common ground might be found. Property denotes a bundle of claims about the *dominion* over a thing, entitling owners to determine permissible conduct with it, eg how and by whom it may be used. Property can be acquired, lost, and transferred to others by contract or law. It comes with responsibilities such as the duty to avert harms emanating from owned things. Property is an important right, but it can be outweighed by public interests, ranging from safety concerns to worries about commodification. Like all rights, property rights pertain to the *relation between persons* (they prescribe conduct related to a thing). Crucially, persons cannot be the object of property claims because persons cannot be owned by others. This inalienability of the person and the legal impossibility of selling and buying persons are the historical legacies of slavery.³⁹

37 Resistance to normative standards, such as ordinary functioning, usually arises in contexts in which it serves as a criterion for in- or exclusion such as the right to vote or coercive medication. If it excludes vulnerable populations, strict scrutiny is called for. But it functions differently in the present context as it sets the bar for interferences, benefitting vulnerable rightholders. If anyone has reason to complain, it is rather well-functioning persons suffering setbacks not captured by the right.

38 J.R. Trahan, *The Distinction Between Persons & Things: An Historical Perspective*, 1 JOURNAL OF CIVIL LAW STUDIES 10–23 (2008).

39 Note that the Lockean view of persons and bodies as property does not affect the legal dichotomy. The Lockean view neither denies differences between things and persons nor necessarily holds that people have

It extends to parts: whatever qualifies as part of the person—the body—cannot be the object of property law, in short: no property in bodies.⁴⁰

III.A. Metamorphoses and Status Changes

A prosthesis is either a body part or a piece of property; its status may change over time. Body parts can metamorphose into things, and perhaps, vice versa. Biological material, such as tissue, blood, or organs, may acquire independent legal status once permanently detached from the body. Legal systems differ in their treatment of detached parts. Some are reluctant to categorize them as property proper for worries of commodification and the inalienability of the body and instead treat them as ‘quasi-property’ or confer ‘non-proprietary’ claims (eg only donation and no selling of organs).⁴¹ But worries about the detached parts do not cast doubts on the axiomatic distinction between bodies and things. In fact, they attest to the significance of the body—not even partially shall it ‘turn’ into property.

The present inquiry concerns the ‘opposite’ direction, the metamorphosis of things into body parts, which we may call the legal ‘incorporation’ of things. It is essential to appreciate its legal consequences. By becoming part of the body, the thing ceases to be an object of property law; in fact, it legally ceases to exist as an independent object. As a result, owners lose their property rights. This is relevant for manufacturers, sellers, insurance companies, or researchers (Case 5). The loss of property through incorporation has to be taken into consideration and may speak against allowing legal incorporation or call for compensation. Conversely, one of the main reasons in favor of incorporation is precisely that it strengthens the rights of users against owners and others; the incorporated prosthesis comes to enjoy the exalted protection of the body. Thus, because of the legal thing-person binary, prostheses must be sorted in one of two mutually exclusive categories that come with different legal consequences for users as well as third parties. Against this specific legal background, we can turn to potential boundaries of the body.

IV. EMBODIMENT AND BOUNDARIES OF THE BODY

IV.A. Physical Criteria

Where might the boundaries of the legal body run? One candidate is straightforward—the bodily envelope, the outer side of the skin. While muddy at the subatomic level, the law usually relates to the meso level of everyday human practice. People tend to experience and recognize the skin as the boundary of the body, here touching someone

a right to sell their bodies. It holds that property is the basic and general type of relation that covers both domains.

40 The literary treatment of the topic is Stanislaw Lem, *Are you there Mr Jones?* VISION OF TOMORROW MAGAZINE, 55–57 (1969), a short dystopian courtroom fiction in which the protagonist is replaced by prostheses and implants, piece by piece, like the Ship of Theseus.

41 Much has been written about the legal status of detached parts, especially in common law countries hesitant to grant property, after the landmark *Moore v University of California* 739 P.2d 479 (Cal. 1990), eg Philippe Ducor, *The legal status of human materials*, 44 DRAKE LAW REVIEW 195–259 (1996); DONNA DICKENSON, *PROPERTY IN THE BODY: FEMINIST PERSPECTIVES* (2007); HARDCASTLE, *supra* note 24. This reasoning is also found in France, where the status of donated blood was in a legal limbo until liability for contaminated blood forced courts to consider it a harmful substance, as reported by Hannah Carnegie-Arbuthnott, *My body and other objects: The internal limits of self-ownership*, 27 EUR J PHILOS 723–740 (2019).

else begins and the need for caution arises. Drawing the legal boundary of the body there allows for clear distinctions between bodies and things. Consequently, everything external to the skin remained legally a thing. Damage to external prostheses would be damage to property; if it spreads further to bodily tissue, it may constitute bodily harm. This *skin-boundary* view entails that implants within the envelope, such as pacemakers or hip-replacements, are part of the body. That they are made from a different clay is irrelevant. However, this seems overinclusive. Some things within the boundary of the skin, such as bullets or swallowed packs of cocaine, are hardly conceivable as part of the body. Retrieving them is not tantamount to taking away a body part (though the retrieval procedure may harm other parts of the body).⁴² It is also noteworthy that the immune system usually attacks or encapsulates alien elements; the ‘foreign body reaction’ is a central obstacle to the development of implants and might be taken to support qualifications to the skin-boundary view.⁴³

‘Biological materiality’ might be another boundary criterion; it excludes bullets, pacemakers, and implants. However, deeper reasons for the significance of materiality are hard to conceive. For instance, the French Cour de Cassation reportedly decided that teeth implants are an integral part of the person.⁴⁴ This seems plausible precisely because materiality by itself seems irrelevant. At best, materiality caters to intuitions of naturalness, but they may quickly change once artificial materials and fabrics become more widespread and culturally familiar, eg as in the current rise of visible worn bionic prostheses.

The skin-boundary view may also need qualifications with respect to external prostheses that are not encapsulated by the skin. Echoing Haraway, Stelarc remarked: ‘We are no longer merely biological bodies. Rather, the body has become chimera, a combination of meat, metal and code. The body has become a hybrid and extended operational system, performing beyond the boundaries of its skin.’⁴⁵ The body is reconceived as a sculpture, an object for redesign, a platform for agency in the world that can take on different forms and be connected to a variety of devices, an open entity transcending skin or biological physicality. This is an appealing reconceptualization of the body and resonates with feminist and transhumanist ideas. The question is how well it is suited for the law. How *far* may such extensions reach? Does the body then comprise, to take examples from Stelarc’s performances, objects like a third arm or artificial ears, wearable exoskeletons or wheelchairs? That is surely too broad, the legal body must find reasonable limits.

42 Neither the reasoning of the US Supreme Court in *Winston v Lee* (470 U.S. 753–1985) nor of the ECHR in *Jalloh v Germany* (App. 54810/00) entertain the possibility of these objects being part of the body. By contrast, the US Supreme Court writes that blood alcohol tests ‘extract a part of the subject’s body’ in *Birchfield v North Dakota*, 136 S. Ct. 2160, 2178 (2016).

43 James M. Anderson, Analiz Rodriguez & David T. Chang, *Foreign body reaction to biomaterials*, 20 SEMINARS IN IMMUNOLOGY 86–100 (2008).

44 Reported in Tugba Akmazoglu & Jennifer A. Chandler, *Mapping the emerging legal landscape for neuroprostheses: Human interests and legal resources*, 4 DEVELOPMENTS IN NEUROETHICS AND BIOETHICS 63–98 (2021).

45 Marco Donnarumma, ‘Fractal Flesh’, *alternate anatomical architectures: An interview with Stelarc*, 14 ECONTACT! ONLY JOURNAL FOR ELECTROACOUSTIC PRACTICES. Cf. Marquard Smith, *STELARC: THE MONOGRAPH*. Cambridge, MA (2005).

These examples point to another criterion, the *degree of attachment*. Objects can be permanently attached to the body like implants semi-detachable like the eyeborg, or easily separable like some bionic limbs. As parts of the body may turn into property once they become separated from it, the reverse might be true as well. This could motivate a detachability test: Things fixed to, or hard to remove from, the body are part of it. However, by itself, attachment is not a suitable criterion either. With a little help of a surgeon, a great many things are permanently attachable to bodies. Some people inject RFID microchips under their skin; many wear fixed jewelry. In some performances, hooks implanted in Stelarc's back firmly connected him to ropes which were connected to steel frames, suspending him in the air. That the entire apparatus becomes part of his body is implausible. Moreover, semi-detachable objects like bionic limbs raise a problem of continuity. Do they change their status through attachment and detachment, or do they remain body parts when detached? The latter would lead to 'fragmented bodies', ie bodies consisting of several physical unconnected parts that might be located at separate places. Many legal quandaries would ensue: What happens if someone steals a detached body part (deprivation of liberty)? How do other people know whether an unaccompanied object is part of a body or a thing, what if someone buys it in good faith and attaches it to *her* body? Practical legal reasons speak against the possibility of fragmented bodies.

IV.B. Functional Approaches

Perhaps, definitions of the boundary of the body might need to move away from phenotype and toward *functional* views of bodies as an ensemble of intertwined functions.⁴⁶ Everything causally contributing to bodily functioning might then become part of it. This creates the minor problem of specifying relevant functions. Some are prototypical, others are more controversial. However, given extensive debates about ordinary functioning in medicine and psychiatry, it seems probable that a set of ordinary functions with gray areas can be determined. Functional accounts have gained prominence with respect to the human mind. The Extended Mind Thesis claims that under certain conditions, the mind extends beyond the boundaries of the skull into the environment. Pen, paper, and iPads which are functionally coupled with cognitive processes may count as part of the mind and should be treated as such.⁴⁷ An analogous Extended Body Thesis (EBT) would hold that if an artifact contributes to ordinary functioning it may be part of the body and should be treated as such, provided the person and artifact can reliably and continuously interact.

A famous decision by the German Federal Court of Justice (Bundesgerichtshof) endorsed a moderate functional view. It held that sperm, extracted from the body and frozen for insemination, can be viewed as part of the body so that its negligent destruction can give rise to compensation for bodily harm. The argument of the Court carries existentialist tones: The tort of infliction of physical harm 'does not protect

46 Arguments in this direction by J. Adam Carter & S. Orestis Palermos, *Is Having Your Computer Compromised a Personal Assault? The Ethics of Extended Cognition*, 2 J. OF THE AM. PHILOS. ASSOC. 542–560 (2016); Herring and Wall, *supra* note 23, 571 ('External objects that share a functional unity with the body can form part of the body for purposes of the right to bodily integrity').

47 Andy Clark & David Chalmers, *The Extended Mind*, 58 ANALYSIS 7–19, 8 (1998). ANDY CLARK, *SUPERSIZING THE MIND: EMBODIMENT, ACTION, AND COGNITIVE EXTENSION* (2008).

material substance, but the being and becoming of the personality that materializes in the body'.⁴⁸ The precise meaning of these words is not clearer in German. Less obscurely, the Court writes that substances taken from the body only to be reinserted later 'to restore bodily functions' still form a 'functional unit' with it.⁴⁹ Thus, temporarily detached parts still belong to the body if they form a functional unit. However, the Court did not ponder about the wider implications of this view such as the problem of fragmented bodies. As a result, the decision was widely criticized by legal scholarship.⁵⁰

Functionalist views would be revisionary for the law. Traditional things enabling ordinary functioning, such as glasses, walking sticks, or canes of blind persons, may then become body parts. Consider a current example, a Covid-19 patient on a ventilator. The device is firmly attached to the body and contributes to ordinary functioning, mimicking the function of the lung, and it reliably and continuously interacts with the person. It is part of a 'functional unit', in the words of the German Court, and would hence be part of the body according to the EBT. A patient told the *New York Times* precisely this: 'My vent is part of my body—I cannot be without it for more than an hour due to my neuromuscular disability'.⁵¹ But what would this view imply? Should hospital staff treat the machine with the same respect than human bodies, eg should it ask for permission to touch and clean it; should patients have a say when engineers need to replace parts? What if such machines cost millions of dollars and manufacturers wish to retain property until the last rate is paid via retention clauses; should that business model be impossible since the ventilator loses its status as property through incorporation? And where might the extended body end? What about the electric installations of the hospital affording the functioning of the ventilator? The EBT does not solve the boundary question but relocates it *ad absurdum*.

IV.C. Subjective Criteria: Incorporation and Body Schemes

Alternative criteria for boundaries of the body might be found in perspectives of affected persons, especially in their bodily *experiences*. According to an influential phenomenological idea, bodies are not merely material objects, but *lived bodies* (Leib), sites of subjective experience, and the peculiar mode of being in the world. Without appreciating this 'embodied subjectivity', the law may miss what it means to have—and be—a body; and the body might have subjective boundaries.

48 Bundesgerichtsh of 09.11.1993—VI ZR 62/93, BGHZ 124, 52; *Neue Juristische Wochenschrift* 1994, p127.

49 *Id.*, at p128.

50 Eg Jochen Taupitz, *Der deliktsrechtliche Schutz des menschlichen Körpers und seiner Teile*, *Neue Juristische Wochenschrift* 1995, 745–752. For an interesting comparison, see the English Supreme Court Case *Yearworth v. North Bristol NHS Trust* [2009] 2 All ER 986, affirming property rights in negligently destroyed frozen sperm; and the French case at the Court of Appeal of Douai, Dec. 6, 2005, *Tellier*, requête numéro 04DA00376, denying property interest in negligently destroyed frozen embryos.

51 Ne'eman, Ari, 'I will not apologize for my needs', *NEW YORK TIMES*, Mar. 23, 2020—<https://www.nytimes.com/2020/03/23/opinion/coronavirus-ventilators-triage-disability.html> [accessed Sep 25, 2022]; cf. Joseph Fins, *Disabusing the Disability Critique*, *Hastings Center Bioethics Forum Essay*, April 1st, 2020. www.thehastingscenter.org/disabusing-the-disability-critique-of-the-new-york-state-task-force-report-on-ventilator-allocation/, reporting and perhaps affirming the argument that a ventilator treating a chronic lung condition is 'part and parcel of that person' [accessed Sep 25, 2022]

Contemporary research distinguishes at least three relevant subjective elements: ‘body image’, ‘body scheme’, and ‘body model’. People have a conscious representation of their body along with beliefs, feelings, and attitudes about it, often a love-and-hate relationship.⁵² A prosthesis may or may not be part of that body image. The eyeborg is part of the body image in Case 1; wheelchairs might often not be so. Moreover, people phenomenologically experience their body, and they have a first-person perspective of a three-dimensional body from within. Bodily sensations are spatially structured and experienced as located in a body-sphere, mostly on its surface (eg an itching felt at the back). This sphere is called the somatosensory field, it constitutes a phenomenological boundary of the body.⁵³

Interestingly, this boundary can be partially expanded to encompass external objects. The cane is Merleau-Ponty’s classic example: holding a cane in the hand and pressing it to the ground, the pressure of the ground is felt in the *tip* of the cane and not in the hand holding it. Thus, the phenomenal body is expanded to the tip of the cane. This embodiment of the cane not only alters the bodily experience but also the psychological mechanisms with respect to the object. Once versed in their handling, objects become transparent, eg one works on the screw and not on the screwdriver. Although the underlying mechanisms are yet to be fully understood,⁵⁴ explanations converge on the existence of an unconscious representation in a ‘body scheme’ mapping the spatial position of the body, its boundaries, and relation to external objects. This scheme is constantly updated and has plasticity to include tools and many but probably not all prostheses.

In addition to this flexible body scheme, a rather inflexible ‘body model’ generates a sense of ownership over body parts. People usually do not experience canes or screwdrivers as part of their body despite embodiment. Another mechanism thus generates feelings of ownership, which can be illustrated by the Rubber Hand Illusion: people can be tricked into feeling that a rubber glove is part of their body, including feeling sensations of touch at its surface, when their real hand is hidden from sight and the glove is in the position where they expect their hand to be. The illusion only works under narrow conditions, indicating that the presumably hardwired model generating ownership is inflexible.⁵⁵ However, some prostheses can be incorporated into the body model if they replace the limbs formerly represented in it (eg after an accident).⁵⁶

52 Cultural critics such as MAX HORKHEIMER & THEODOR W. ADORNO, *DIALECTIC OF ENLIGHTENMENT* (1972) argue that the love-and-hate relationship to one’s body characterizes modern culture. The site of sin as well as seduction, supposedly inferior to the mind, yet surrounded by many taboos. Something that people simultaneously desire and seek to transcend.

53 Such claims are discussed by Frederique De Vignemont, *Habeas Corpus: The Sense of Ownership of One’s Own Body*, 22 *MIND & LANGUAGE* 427–449 (2007).

54 A review, Aubrie Schettler, Vicente Raja & Michael L. Anderson, *The Embodiment of Objects: Review, Analysis, and Future Directions*, 13 *FRONT. NEUROSCI.* 1332 (2019).

55 The illusion arises when multiple sensory inputs coherently indicate that the object is one’s hand. Referring to the rubber hand, subjects say that ‘this my hand’. Recent studies replaced the sensory inputs by directly stimulating parts of the cortex representing the hand, Kelly L. Collins et al., *Ownership of an Artificial Limb Induced by Electrical Brain Stimulation*, 114 *PROC NATL ACAD SCI USA* 166–171 (2017).

56 Helena De Preester & Manos Tsakiris, *Body-Extension versus Body-Incorporation: Is There a Need for a Body-Model?*, 8 *PHENOM COGN SCI* 307–319 (2009).

The multiplicity of body representations with varying degrees of plasticity corresponds to diverse experiences of users.⁵⁷ Some experience their prosthesis as an external object and not part of themselves.⁵⁸ Others embody it and sense the ground, like in Merleau-Ponty's cane, through their prosthesis, only in a 'cruder manner'.⁵⁹ Still others incorporate the prosthesis into their body model, blending it with the residual phantom experience of the amputated foot and restoring a sense of 'wholeness'.⁶⁰ A user reports: 'It is certainly nice to still feel the [phantom] foot. Primarily, it facilitates the use of the prosthesis because I don't feel as anything is really missing. So my prosthesis is "natural".'⁶¹ Difference in experiences likely ground different assessments about whether devices are part of their body. For instance, many patients with implanted defibrillators successfully integrate it in their body image, but it causes problems and feelings of alienation for some when 'looking at themselves or touching the area of implementation'.⁶² Some researchers speculate about the possibility of unconscious rejections of alien objects, especially at the heart, symbolically central to the person.⁶³ Other users consider devices as part of themselves: '[T]hough I've not got my lower arm, it's as though I've got it and it [the prosthesis] is part of me now.'⁶⁴ A user of a high-tech robotic arm similarly remarks: 'it was the second day of training when [the robotic arm] became my arm [. . .] I started saying, "I moved my arm." [. . .] I felt like it was part of me.'⁶⁵ User experiences and the degree of integration of devices apparently vary considerably.

How may these subjective boundaries bear on the law? Phenomenological views seem attractive as they easily explain why prostheses should qualify as body parts. On a second look, however, they might not be suitable for legal purposes. Canes or screwdrivers are paradigmatic examples of legal things—and must remain so if a reasonable distinction between body and things is to be maintained.⁶⁶ Neither embodiment is thus a suitable criterion nor are the body images people have of themselves, as they may include wheelchairs, smartphones,⁶⁷ or other things. And while people defining the boundaries of their body for themselves breathes the individualistic air of our times, as long as boundaries affect other people and the public at large, general criteria need to be established.

57 Frédérique de Vignemont & Alessandro Farne, *Widening the body to rubber hands and tools: what's the difference?*, 2 *REVUE DE NEUROPSYCHOLOGIE* 203 (2010). Vivian Sobchack, *Living a 'Phantom Limb': On the Phenomenology of Bodily Integrity*, 16 *BODY & SOCIETY* 51–67 (2010).

58 Cd Murray, *An Interpretative Phenomenological Analysis of the Embodiment of Artificial Limbs*, 26 *DISABILITY AND REHABILITATION* 963–973, 971 (2004).

59 *Id.*

60 Murray, *supra* note 74 at 970.

61 *Id.*, p. 969.

62 C. Pycha et al., *Patient and Spouse Acceptance and Adaptation to Implantable Cardioverter Defibrillators*, 57 *CLEVELAND CLINIC JOURNAL OF MEDICINE* 441–444, 441 (1990).

63 Beery and Baas, *supra* note 8.

64 Murray, *supra* note 58, p970.

65 Johannes Kögel, Ralf J. Jox & Orsolya Friedrich, *What is it Like to Use a BCI?—Insights from an Interview Study with Brain-Computer Interface Users*, 21 *BMC MED ETHICS* 2, 10 (2020).

66 For the embodiment of wheelchairs, see Giulia Galli et al., *The Wheelchair as a Full-Body Tool Extending the Peripersonal Space*, 6 *FRONT. PSYCHOL.* (2015).

67 Park, Chang Sup, and Barbara K. Kaye, *'Smartphone and Self-Extension: Functionally, Anthropomorphically, and Ontologically Extending Self via the Smartphone'*, *MOBILE MEDIA & COMMUNICATION* 7.2 215–231 (2019).

The stable body model seems to be the most promising candidate; it would include only those prostheses mimicking amputated limbs.⁶⁸ The decisive argument against it stems from its susceptibility to distortions in body identity integrity disorder. Affected people experience a healthy, natural limb as alien and may sincerely seek its amputation. Whether this wish should be granted is a thorny medical ethical question. If the body model were legally relevant, the limb would not qualify as part of the body, and the ethical problem of amputating a healthy body part would not even arise—an implausible result.

Subjective criteria are therefore inapt to draw legal boundaries. This leads to a perhaps surprising realization: postmodern voices suggesting that the boundaries of the body are not fixed are indeed correct. Bodies have multiple physical and phenomenological boundaries; all of them are reasonable and relevant descriptions. But none of them unreservedly qualifies for legal purposes.

V. LEGAL PERSPECTIVES

V.A. Skepticism About Bodily Integrity

What follows from the absence of fixed boundaries for the law? Uncertainties about the delineation of body and world have motivated remarks and suggestions from legal scholars like the introductory one by Koops. For instance, Gowri Ramachandran develops an argument from her diagnosis that the ‘experience of our bodies is not isolated from the environment’. The body which the law ought to protect ‘is not the human body [. . .] but rather the “posthuman body”, defined as constructed by and situated within a social and technological context.’⁶⁹ However, the boundaries of the posthuman body also escape definability: ‘[P]rotecting this “posthuman body” can’t be done by carving it off for special legal status because it can’t be carved off at all.’⁷⁰ This leads to the surprising conclusion that the law ‘should no longer recognize a fundamental right to bodily integrity’.⁷¹ Thus, in this view, the alleged inability to carve off body boundaries leads to the collapse of the very category, and therewith, the right to bodily integrity.⁷²

However, the problem of defining the body as separate from the environment might not be too serious. One may grant that bodily abilities only emerge in interaction with the environment, a view underscored by the social model of disability. And in reference to the thesis that bodies and technologies co-emerge, one may say that bodies are jointly produced by nature, culture, and technology. But the fact that two entities are closely related, affect, or depend on each other does not imply that they are inseparable. In fact, most of the previously discussed boundary criteria allow separating bodies from environments; they only have unpersuasive normative consequences. Future implants or fabrics might become so interwoven with the biological body that they become truly

68 Steffen Steinert et al., *Doing Things with Thoughts: Brain-Computer Interfaces and Disembodied Agency*, *PHILOSOPHY & TECHNOLOGY* (2018).

69 Ramachandran, *supra* note 9 at 38.

70 *Id.* at 39.

71 Note that she does not suggest to ‘abandon many familiar rights such as the right not to be tortured or raped’, *Id.* at 2.

72 Cf. also a normative argument to the same end by Viens, *supra* note 9.

inseparable and hence cannot but be treated as part of the body. But this does not apply to descriptively separable things such as prostheses.

The challenge might arise less from inseparability but more from incoherence. Why is a memory trace less strongly protected in the iPad than in the brain, a natural limb more strongly than the prosthesis that replaces it? These results might appear counterintuitive. However, they may be the price of the unique legal status of the body. If one accepts the first axiom, the supreme importance of the body, it has to be distinguished from other things, even important ones, and such distinctions typically create gray areas. They should be addressed by legal norms when possible but do not compel a redefinition of the body or the right to integrity.

V.B. Integrity of the Lived Body

A more constructive proposal by Jonathan Herring and Jesse Wall deserves mentioning. Drawing on the phenomenological idea of the body as ‘leib’,⁷³ they ground the right to bodily integrity in its function as the basis for subjectivity, or as they put it, as the point of integration between subjectivity and objectivity. This redefines the body: ‘What counts as the body [. . .] is determined by the physiological function that any part of the body performs’. Relevant are contributions to the ‘lived experience’ of the embodied being. Consequently, ‘the boundary between what is captured by bodily integrity and what is not [. . .] is not determined by objective and physiological facts, but by whether the bodily component is a point of integration of a person’s subjectivity and objectivity’.⁷⁴

This suggestion is intriguing but not without challenges. The applicable notion of subjectivity remains undefined and so does the reason why it should form the rationale for the right to ‘bodily’ integrity. In general, subjective phenomena might be more adequately captured by the right to mental integrity (Art. 8 ECHR, Art. 3.1 ECFR). Also, protecting the body as the lived body seems to value the physical object only instrumentally. It may fall short of capturing the harmful interferences with the body not affecting ‘lived experience’ such as inflicting asymptomatic illness. It might also be too broad as it may comprise external devices directly affecting subjective experience, from heating systems to ventilators, so that the problems of extended bodies resurface. While the lived-body approach may be a sensible suggestion for a particular jurisdiction which illuminates the rationales possibly underlying the right, it cannot shape the scope of the right as it differs considerably from its shared understanding as pertaining to the corporeal basis of human existence.

V.C. Stakeholder Interests

The foregoing suggestions do not relieve the law from the challenge of drawing boundaries. Without a fixed ontological conception to resort to, it should turn to normative criteria that best accommodate the interests of stakeholders—users and third parties like owners—as well as legal considerations. Let us briefly look at them in turn.⁷⁵

73 Herring and Wall, *supra* note 23.

74 *Id.* at 587.

75 A fuller treatment of interest users of prosthesis is Akmazoglu and Chandler, *supra* note 44.

V.C.1. Interests of Rightholders

The interests of users of prostheses and devices typically comprise:

- access to devices (including support during the life cycle, Cases 2 and 5);
- liberty to use devices (not being ordered to turn them off, ‘freedom from disconnection’, Case 4);
- absence of rights of third parties affecting use (property, contractual obligations, copyright laws);
- protection against factual interferences by others (from damage to search and seizure; Case 4);
- adequate remedies for interferences (Case 3);
- restoring bodily ‘wholeness’ through prostheses;
- expression and recognition of one’s identity (Case 1);
- non-discrimination because of the absence of abilities or wearing prostheses;
- the wish to not see oneself as ‘deficient’ and not be seen as such by others.

These partly overlapping interests are of concern to human rights law and are, in some way or another, directly affected by the delineation of the body. Regularly, the greater the extent to which prostheses are considered part of it, the better the foregoing interests are served because more prostheses partake in the special protection of the body. However, countervailing interests of others must be recognized as well. Furthermore, the right to bodily integrity might not serve all just mentioned interests. Some of them are covered by other rights (varying between jurisdictions): human dignity may well comprise a sense of bodily wholeness, personality rights protect the expressions of identities and their recognition, non-discrimination laws cover unequal treatment, and the CRPD obliges states to develop and provide access to prosthetic devices. The right to bodily integrity is likely overburdened with accommodating all of these interests by itself.

V.C.2. Interests of Others

Countervailing interests of others are strikingly neglected in debates outside the law, often exclusively addressing the perspective of the embodied person. This is a methodological shortcoming which overlooks that rights are *relations between persons*. Expanding the scope of a right necessarily expands the scope of correlative duties borne by others. It is precisely these setbacks to duty-bearers that need justification.

In general, interests of third parties, such as owners (and everyone in the chain of production, from manufacturer to seller), are served best when prostheses remain objects of property law. Otherwise, owners risk losing property through incorporation; this calls for justification or compensation, and may have stifling effects on markets and complicate legal dealings. For instance, lending someone prostheses or conducting a study in which they must be returned upon completion (Case 5) might become impossible when owners lose and users acquire property.

Third parties may have further interests. Reconsider the ventilator case. The very point of conceiving the ventilator as part of the body of the patient rather than an external machine is to increase the bar for involuntary disconnection of that patient. Through this construction, giving the ventilator to *another* patient becomes tantamount to involuntarily taking someone’s organs, an inhumane practice most legal

orders eschew. By contrast, if the ventilator remained a thing, giving it to another patient would simply be one among several options in a dilemmatic triage situation. Considering it as a body part thus increases the protection of one party, the connected patient, at the expense of another. It is not clear that this arrangement fairly balances the interests of all parties; there might well be other legitimate reasons for distributing ventilators such as medical prospects. Reclassifying the ventilator as a body part evades such discussions by declaring it off-limits for redistribution. This example shows that third-party interests must be given due consideration.

V.C.3. Public Interests

The boundary question also touches on *public* interests. The larger the private realm of the body, the less room for democratic decision-making. Respecting bodies comes with costs to society that need justification. A simple example concerns public space. Spatially enlarged bodies require more space, which may require, eg considerable investments in public transport, as the efforts to install wheelchair ramps in public places, often still without satisfactory results, demonstrate. It is not self-evident that societies must mobilize the same efforts to accommodate transhumanist body modifications not alleviating disability. Also, consider sensory augmentations as the eyetap (Case 1). User interests must be balanced against the privacy concerns of people not wanting to be filmed and the broader effects of camera systems in public places. The outcome should not be prejudiced by the fact that a camera is implanted into or firmly attached to the body. While interests of disabled persons usually outweigh privacy interests of others or the public, the opposite may be true when non-disabled persons use cameras. Similarly, many modern prostheses confer abilities onto users that exceed ordinary abilities, eg in terms of strength (bionic limbs). This may shift ability expectations and competitive standards. Society seems prepared to accept such shifts when they result from measures alleviating disability but might not when they result from transhumanist augmentations, as the rationale for privileging the former does not apply to the latter. Considering prostheses as part of the body would hamper nuanced recognition of public interests.

Finally, there is a robust public interest in innovation and production of prostheses and assistive devices. In market economies, for better or worse, this suggests treating them as alienable goods that can be bought, sold, and distributed. More generally, the idea of non-commodification of the body stands in tension with the public interest in dynamic innovation, which requires or at least favors, under contemporary market economies, to consider prostheses as alienable goods that can be manufactured, sold, and traded for profit. When markets are desirable in one domain, but not in another, a legal system that distinguishes between these two domains and sets different regulations seems to be called for.

V.C.4. Legal Considerations

Finally, the pragmatic interests of a working legal system deserve recognition. The first concerns public visibility of the status of an object. An ordinary person encountering an object must be able to infer whether she is dealing with a body part or piece of property to guide her behavior accordingly, eg whether she is allowed to touch it. Fragmented bodies arising from detached prostheses should thus be avoided. In addition, the law

strongly prefers arrangements in which objects do not change their category frequently and without public notice, as legal disputes require retrospective reconstruction of the past. Moreover, many norms from product liability to medical device regulations explicitly apply to things and not to body parts. If prostheses become the latter, the entire body of norms might be inapplicable. It is, for instance, not clear if manufacturers might be liable for the malfunctioning of a device that has ceased to exist as a separate legal object. As a result, many norms providing reasonable substantive rules would be inapplicable, generating legal uncertainty and (substantively unnecessary) need to widely reformulate laws.

VI. PROPOSAL

In light of these considerations, I wish to submit a proposal for the understanding of the legal body. The body is an essential and unavoidable reference point of legal norms. However, neither metaphysical facts nor subjective or objective criteria clearly define the boundaries of the body. Furthermore, neither extra-legal conceptions of the body nor internal criticisms of the right to bodily integrity compel or refute a specific conception. Rather, various accounts of bodies, from biological to posthuman ones, have considerations speaking in their favor. Against this backdrop, the preferable position for the law is the one that accommodates affected interests most comprehensively without unduly prejudicing conflicts that require substantive argument.

The allegedly naive naturalist view of the body as a biological entity of flesh and blood which ends at the skin is supposedly most suitable for the legal interpretation of 'body'. This view largely excludes implants, prostheses, and devices, which remain things and objects of property law. It is perhaps the most minimalist conception and stands in contrast to the expansive conceptions of the body endorsed in many fields. But it derives from legal specific considerations which are often overlooked elsewhere. It comes with a few exceptions and conditions for constructing the right to integrity to alleviate shortcomings.

The proposal has several advantages over alternatives: First, it allows feasible distinctions as the sphere of the body is clearly identifiable; body and environment are analytically and normatively separable. Alternative more expansive views need to supply other boundary criteria, especially functional accounts risk enlarging the body *ad absurdum*, which threatens to undermine its special status. Second, the body's special status is partly owed to the experience of pain and specific vulnerabilities that typically do not apply to inorganic devices.⁷⁶ Third, the proposal avoids legal gaps and allows nuanced decisions as separate regimes tailored to the specificities of things and bodies apply. The proposal recognizes the dual nature of prostheses: in some descriptions, they are part of the body; in others, they are technical artifacts and alienable goods. The law cannot ignore their latter nature as it needs to regulate their production, distribution, and matters of liability. Such considerations do not apply to biological bodies. Fourth, the proposal is conducive to the pragmatic demand of public visibility of the status of an

76 Of course, when people critically rely on functionally integrated implants, eg pacemakers, they become vulnerable to technological failures ('pacemaker panic'). But such effects are addressed via bodily integrity and harm and do not require the incorporating device.

object and avoids fragmented bodies. Thus, public, pragmatic and third party interests are served best by conceiving prostheses as things.

However, the proposal might seem unfavorable to users. But many of their interests might be accommodated through the following conditions: First, the scope of the right to bodily integrity should guarantee, among others, ordinary species-typical physical functioning. In combination with the ‘indirect interference’ argument, destruction or deprivation of devices can be considered as interferences. If damaging wheelchairs places users in a condition in which they lack ordinary capacities, their bodily integrity might be interfered with (provided they could reliably and rightfully access their wheelchairs and are without alternatives, as in Case 3). The same is true for malfunctioning pacemakers. This construal ‘expands’ the scope of the right to bodily integrity without expanding the concept of the body. It is consistent with the analyses of battery and the ECtHR jurisprudence. Note that it widens current law: taking away the glasses of a shortsighted person may interfere with bodily integrity. Through this construction, users are protected against factual interferences with prostheses insofar as typical functioning is disrupted. But this construction does not comprise the transhumanist interest in enhancement devices. Damage to them remains as damage to property as it does not strip persons of ordinary functioning.

Second, the right to integrity should encompass the freedom to transform one’s body. While partly implied in the general right to autonomy, it deserves explicit mentioning as the term ‘integrity’ leaves this liberty invisible. It follows from the widely accepted power to consent to interventions into one’s body. Consent waives the protection against interference by others. This presupposes the power to authorize other people to transform one’s body.⁷⁷ The point is this: what others may rightfully do to persons, rightholders should be allowed as well (unless it requires special medical training). In this limited sense, the current law recognizes ‘morphological freedom’.

Third, the advantages of prostheses remaining objects of property have as a downside for users that third parties might retain rights over them. This may impede the use of prostheses. However, adequate solutions might be found at the level of property law (which varies between jurisdictions).⁷⁸ The key suggestion is that even if a prosthesis remains an object of property law, third party owners should lack the legal power to interfere with its use (disassembly and taking away). The precise argument to this end needs adaption to domestic property laws. In one construal, ownership of the prostheses is transferred to users by law, ie without requiring owners’ consent (but entitling them to compensation). A new doctrine of incorporation might stipulate the precise conditions under which the property of incorporated objects is transferred to users. An alternative construal lies in the Roman doctrines of accession and confusion according to which the ownership of objects of several parties that become inseparably intermingled falls to the party with the biggest share; it must compensate the others in turn. Permanently attached prostheses or implants may be deemed *legally* inseparable from the body as the removal often interferes with bodily integrity. The consequence of both constructions is that users acquire property and former owners are entitled to compensation. In a third possible construal, users do not acquire property, but property

77 WILLIAM SCHABAS, *THE EUROPEAN CONVENTION ON HUMAN RIGHTS: A COMMENTARY* 370 (2016).

78 For perspectives from common law, see Quigley and Ayihongbe, *supra* note 7.

claims of owners become unenforceable because removing ('disconnecting') devices interferes with integrity of users. In all three constructions, the right to bodily integrity prevails over the right to property of owners, satisfying user interests and guaranteeing a basic freedom from disassembly.

Still, these considerations might not apply to prostheses that can be easily and harmlessly removed from the body such as glasses or wheelchairs. Users need to acquire property in them or rights to use them on ordinary ways, eg by buying them. Otherwise, owners can in principle demand their return. This may not satisfy user interests but seems normatively reasonable. Otherwise, lending devices always carried the risk of losing property. If, for instance, health insurers pay for prostheses, their interest in reusing them when no longer needed by the patient for medical reasons is understandable. More generally, easily separable prostheses are typically replaceable artifacts. Treating them unlike the natural body is justifiable. Should the need arise for better protection of prostheses, the law is free to introduce further norms. It may, for instance, stake out a specific legal category for prostheses and assistive devices and stipulate norms that accommodate user interests (not unlike the special status of detached body parts in some jurisdictions as 'quasi-property').⁷⁹ The possibility of creating more finely calibrated rules shows that property law is the adequate legal-technical instrument.

The present proposal is less revolutionary than some political demands, but it accommodates many underlying interests of stakeholders without necessitating far-ranging changes to the law. It coheres better with the evolved landscape of human rights and legal categories than alternatives. In the end, two claims stand in an irresolvable tension: the exalted status of the body calling for special protection, and its extension into mundane artifacts and alienable goods. Unlike one is prepared to degrade the protection of the body, strong reasons and practical demands speak for considering prostheses as things. The present proposals is thus preferable to a more disruptive reconceptualization of the body.

The only argument not satisfactorily addressed by this proposal might be put like this: The naturalist account discriminates against non-natural bodies by treating biological limbs and artificial prostheses unlike. This seems to run counter to anti-discrimination ideas. But it should be noted that it is not self-evident that these ideas should determine the legal conception of the body. This is an intriguing idea, but it may not carry the far-ranging legal-theoretical and practical consequences it implies. The range of considerations invoked in the foregoing discussion shows that once the interests of stakeholders and the public enter the picture, artificial and biological limbs are not alike in normatively relevant aspects. For instance, athletes wearing augmenting prostheses would need to be allowed to compete with biological bodies in sports events (as in the Oscar Pistorius case). While one may have sympathy for this, it requires substantive normative debate and should not be determined by redefining the body.

Moreover, it must be noted that the right to bodily integrity is complemented by other rights, especially human dignity. As the case law of the ECtHR shows, human

79 A concept debated in French law concerns *objets corporel personne par destination*; an object becomes part of the body by being assigned to it, its legal status then follows the one of the main object. See Ducor, *supra* note 41. Another thought in this direction is the idea of personal (non-fungible) property by Margaret Jane Radin, *Property and Personhood*, 34 *STANFORD LAW REVIEW* 957–1015 (1982), who considers prostheses to take the position of the organs they replace.

dignity and the right against degrading treatment may apply to the withholding or taking away of assistive devices. Crucial to those decisions is the state of helplessness and dependence in which people are placed. If removing wheels from a wheelchair by the police seems more objectionable than handcuffing a person (Case 3), the reason does not lie in the restriction of movement (which might be similar in both cases) but in placing the user in a supposedly undignified state of helplessness and vulnerability. Dignity also protects the critical aspects of a person's relation to herself. Prostheses restoring a sense of bodily 'wholeness' fall under its ambit. But such cases may not generalize to all assistive devices. Moreover, dignity or rights to personality may capture identity-based claims, such as recognition as a member of a specific group, eg as a cyborg. In Case 1, using the eyeborg is generally covered by the right to bodily integrity, and its portrayal in a passport picture may well be an interest in recognition falling under the right to personality (or domestic equivalents).

These considerations also give grounds for two possible exceptions. The key objection against expanding the body is that it may detrimentally affect legitimate interests of others. In the absence of such interests, however, no principled reasons oppose expanded bodies. This applies to two cases: Many implants within the envelope of the skin (pacemakers and artificial knees) may not have considerably further negative effects on others. The same seems true for attached artificial limbs that replace or mimic natural limbs, or similar devices such as the eyeborg, that do not significantly alter the gestalt of the person. If such devices are so intimately tied to the identity of users that they desire to have them socially recognized as part of their body, the law has leeway for accommodation. This presupposes, however, that the rights of third parties such as manufactures are not unduly limited, and it may create legal uncertainties regarding liability; fragmented bodies should be avoided. For reasons of clarity and public visibility, these devices should be incorporated through an official act of incorporation that brings about the status change. However, the law should reserve this for exceptional cases and not extend it to mundane things such as jewelry or headscarves. In general, instead of reconceptualizing the body, the level of protection afforded to some especially important things as property should be reconsidered.

Finally, transhumanists may lament that the proposal is disadvantageous to future cyborg bodies. To avoid misunderstandings: this proposal is not grounded in bio-conservative proclivities to preserve contemporary bodily forms or functions against transformations. It concerns interpersonal relations under present-day conditions. It is open to the future as 'ordinary functioning' is an evolving concept. Still, transhumanists have a truth to face: technologies may affect the rights of others and interests of the society. It needs to be shown—rather than assumed—that transhumanist interests prevail over the latter. This requires substantive arguments not to be evaded by declaring technologies to be body parts. We may well need more, not less, democratic oversight over the emerging technologies.

VII. CONCLUSION

The following findings emerge from the analysis: Two axioms shape the legal conception of the body; its exalted status and a strict dichotomy between bodies and things. A prosthesis or assistive device can only belong to one category at any point in time. Second, the law as it stands accepts a basic right to transform one's body as an instance

of the general idea of autonomy. Insofar as this concerns alleviating disability, special protection by the CRPD sets in. Beyond the CRPD, the existing right to bodily integrity in conjunction with the principle of autonomy creates a liberty to modify one's body. The law recognizes morphological freedom in this sense, but it can be outweighed by countervailing interests or paternalistic reasons. By contrast, it does not recognize morphological freedom in the sense of everyone freely defining the boundaries of their body for themselves. As the delineation of public and private spheres affects everyone and society at large, a general definition is required. Third, the existing right to bodily integrity can be interpreted widely without enlarging the concept of the body. In combination with the indirect interference argument, taking away assistive devices may qualify as an interference if it thwarts the reliable and rightful use of the device and places users in a state in which they lack ordinary functioning. Withholding devices may interfere with bodily integrity if it contravenes a duty to provide (or support) such devices, which may apply to prisons or manufacturers. This secures a basic 'freedom from disassembly'. Notably, this construction extends the current scope of bodily integrity to glasses, wheelchairs, or walking sticks. However, more narrow norms of tort or criminal law may not be open to a broader interpretation and might need reformulation. Fourth, the law should maintain its implicit naturalist conception of the human body, restricted to the biological entity of flesh and blood, ending at the skin. Fifth, other rights, such as human dignity, complement bodily integrity and may confer further claims on users. Also, there is leeway to treat prostheses and implants as part of the body, provided third-party rights are not adversely affected; a symbolic act of incorporation is suggested for the sake of public visibility.

We can finally return to Haraway's famous question: Why should our bodies end at the skin? Neither because it is itself a normatively relevant border nor because organic materiality should be privileged. Neither because the dependence of bodies on supportive environments is disregarded nor because bodies have fixed ontological boundaries which the law needs to track. On the contrary, bodies have multiple boundaries, and all of them are in some sense socially constructed. But the social construction of bodies and prostheses significantly differs. Prostheses are of a dual nature. They are parts of the body and at the same time, material artifacts to be manufactured, sold, acquired, and replaced when broken. They come into the world through social cooperation and their use affects social interests. From this, valid societal interests in their regulation arise. In other words, the legal body ends at the skin because everything beyond its borders has a social dimension that the law cannot ignore. Expanding bodies into things while accommodating social interest in them would result in a devaluation of the body.

A naturalist conception of the body combined with the proposed construction of the right to integrity coheres best with the legal order of things and provides room for nuanced solutions. The law might improve norms for devices without reconceptualizing the body. The real problem for many users, it should be noted at least once, is often a different one, namely the lacking availability and accessibility of effective and affordable prostheses. States and companies should urgently seek to improve this situation.

The proposed conception of the legal body emerges from legal premises and the legal binary between persons and things. It neither contravenes other conceptions of the body, which may be preferable for non-legal purposes, nor does it deny the diversity of bodies, or the plurality of possible boundaries. It can acknowledge the appeal of

the sometimes radical reimaginings of the body. However, the law is less concerned with metaphysical, political, or moral views, inspiring as they might be; but more with finding reasonable, operationalizable, and coherent rules for specific problems that lead to largely fair and acceptable results.