



Binarytech in Motion: Intersex Persons in the Binary Lawscape

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Accepted: 11 August 2025
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Abstract

In this text, we are mapping how law and its adjudication have an active role in how both matter (bodies) and meaning (binary sexgender) enable and constrain the emergence of legal subjectivity as a material-discursive phenomenon. Through analysing the decision of *M v. France* of the European Court of Human Rights, we address how legal subjectivity can be understood as an entanglement that emerges from intra-actions: of enactments of differences between law, court reasoning, body matter, binary discourses, and space. Our analysis demonstrates how the law prescribes material consequences on the level of bodies that are deemed “abnormal”. We argue that understanding these practices as material-discursive, without giving precedence either to matter or meaning, aids in elaborating the ways in which not only law but also power, matter and space affect intersex persons, or anyone, who does not conform to the binary *lawscape* of male/female. BinaryTech methodology mobilised in the article illustrates how law and binaries become expressed in and through bodies and how the sexgender hierarchy becomes an ontological part of legal subjectivity through matter and discourse.

Keywords Legal subjectivity · New materialism · Lawscape · Intersex human rights · European court of human rights · Feminist legal theory

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Introduction

In this article, we demonstrate how the binary sexed and gendered legal subject emerges from the entanglement of matter and discourses as a material-discursive phenomenon that is only momentarily differentiated within the ongoing becoming of the world. We question the axiomatic understanding of a stable legal subjectivity that relies on the existence of binary sex and gender systems, rendering it apprehensible to law. We address such subject formation as ontologically indeterminate, understood as a constant re-iteration of enacted binary differences in matter alongside meaning. We base this article on our new materialist theoretical framework emerging from Nordic feminist legal theoretical discussions on subject formation.

In the contemporary context, trans people's rights have become politicised in the wake of a global attack by 'neoconservative' political parties and governments against something called 'gender ideology' (see, e.g. Butler 2024). These developments happen on a global scale, and discourses transgress borders. One of the central claims of these attacks concerns the apparent supremacy of the biological understanding of sex perceived of as something fundamentally different to the 'false' socially constructed gender.

This article will begin by foregrounding this context by pointing out how these developments are visible in seemingly different social and political contexts before proceeding to an analysis of a case from the European Court of Human Rights (ECtHR), which highlights the entanglement between law, bodies, and matter. The case concerns the involuntary material alteration of the applicant's body based on the binary understanding of sex and gender in terms of intersex persons. Furthermore, we call into question the rigid division between biological sex and social gender as a reiteration of the nature/culture dichotomy.

A recent case in point illustrating the falsehood and self-contradictory nature of the political organisation attacking 'gender ideology' is the Donald Trump administration. The White House issued numerous executive orders in 2025, *inter alia*, 'Defending Women From Gender Ideology Extremism and Restoring Biological Truth to the Federal Government' and 'Keeping Men Out From Women's Sports' alongside another titled 'Ending Radical and Wasteful Government DEI Programs and Preferencing'. Ironically, while the government claims to protect women from the so-called 'gender ideology', it seeks to abolish Diversity, Equity, and Inclusion policies (DEI) against the backdrop of the existing anti-discrimination law that has historically favoured white women (Crenshaw 1989). Consequently, women who support this attack against 'gender ideology' will inevitably face negative repercussions from these contradictory executive orders where the judiciary fails to prevent their implementation.¹

DEI policies aim to target gender and racial hierarchies by the inclusion of discriminated groups. As mentioned, estimates indicate that white women have also been the primary beneficiaries of DEI policies in the U.S. (Women in the Work Place

¹Many of the orders have already been appealed. See Litigation Tracker: Legal Challenges to Trump Administration Actions, < <https://www.justsecurity.org/107087/tracker-litigation-legal-challenges-trump-administration/>>.

2024). This suggests that belonging to the category of women in itself means not being part of the dominant group in society (see e.g. Lugones 2023). However, as many authors have pointed out (Davies 2019; Odysseos 2017; Madhok 2024; Vergès & Bohrer 2021) and as the Trump administration's policy programs demonstrate, the question of oppression and discrimination is more complex than drawing the line between men and women, wherever the societal and legal order in question sees fit to draw such a line. In this article, we investigate this division based on sex and gender in order to offer insight into how and what differences come to *matter*.

In Europe, Finland — which we are accustomed to viewing as a Nordic welfare state with advanced social conditions — has not been left out of these questionable international developments. The attacks on 'gender ideology' have also emerged in the Finnish political context. A Citizens' Initiative was launched in 2024 on the online platform *kansalaisaloite.fi*, which is maintained by the Finnish Ministry of Justice and enables citizens to propose new laws to the parliament.² The Initiative, titled *KASVURAUHA 2024 – sukupuoli-identiteettipolitiikka pois kouluista!* [Development Peace 2024 – Gender Identity Politics Out of School] aimed to ban 'gender ideology' from public education, which, according to its drafters, was introduced by Seta Ry, a Finnish NGO advocating for LGBTI+ rights. The Initiative defines 'gender ideology' as a political-ideological movement that aims at subverting the 'science-based' understanding of binary sex as a 'biological truth'. Teaching about the multiplicity of sexuality and gender expression has been part of the current national core curriculum for some time.³ Support collection for the Initiative closed on 11th December 2024, totalling 15,286 signatories out of the 50,000 required, and thus did not progress on to *eduskunta* [the Finnish parliament].

Similar developments came to a head in the U.K. in Spring 2025, when the Supreme Court was called upon to decide how the Equality Act 2010 should be interpreted. On 16th April, the U.K. Supreme Court decided in *For Women Scotland v. The Scottish Ministers*,⁴ that the terms 'man', 'woman', and 'sex' in the Equality Act 2010 refer to 'biological sex', irrespective of whether a claimant has legally changed their assigned-at-birth gender by obtaining a Gender Recognition Certificate under the provisions of the Gender Recognition Act 2004. The judgment, therefore, sanctions the existence of specific spaces lawfully limited to biological women or men. These examples demonstrate attempts to undermine the human rights of already discriminated groups through the appeal to 'biological sex' as a binary category. In this article, drawing from theoretical discussions and case analysis, we interrogate the idea of binary sex/gender as a sole 'truth'.⁵ We discuss an inadmissibility decision by

²The Finnish Constitution includes a provision on citizens' initiative for proposing new laws to the parliament (Finnish Constitution 731/1999, Sect. 53). According to the provision, 'at least fifty thousand Finnish citizens entitled to vote have the right to submit an initiative for the enactment of an Act to the Parliament'.

³The national core curriculum 2014, 104/011/2014, Sect. 2.2;4.2.6. Available at the eRequirements service in Finnish and Swedish. The eRequirements service is maintained by the Finnish National Agency for Education and contains national core curricula and qualification requirements for vocational qualifications, as well as local curricula by the education providers.

⁴[2025] UKSC 16.

⁵Recently on the notion of truth as historically constructed and imbued with power relations, see Tuominen (2025a, b).

the ECtHR on the case of *M v. France* (42821/18, 19 May 2022, hereafter referred to as ‘*M*’). In the case of *M*, the applicant was an intersex person who, during childhood and adolescence, underwent ‘feminising’ surgery and medical treatment. According to the applicant, this led to severe psychological and psychiatric problems, leading to a life under disability pension. The applicant was born as a healthy intersex person outside of the binary. The medical and legal administration cannot unproblematically categorise intersex individuals as male/female within the system’s binary constraints, and sometimes individuals themselves do not wish to participate in that categorisation as their choice. Indeed, although trans- and intersex rights have leapt forward in many places, it still seems that legal protection and access to medical services are attached to the male/female binary (ILGA-Europe 2024).

We address the issue from a new materialist starting point, combined with perspectives from Nordic feminist legal theory and the concept of *lawscape*, as theorised by Andreas Philippopoulos-Mihalopoulos. The case analysis challenges the continued separation of ‘biological sex’ and ‘socially constructed gender’ and, as such, calls into question the dichotomy between nature (sex) and culture (gender). We extend the discussion in a new materialist vein to the division of physical matter and discourse, which we treat as a material-discursive continuum. Intersex people are born into a binary reality and, as such, challenge the assumption of the cultural and legal practices relying on the assumed male/female dichotomy. Therefore, intersex bodies are likely to be materially altered by law, which is often seen as a common-sense view.

Looking deeper, we can observe how such a view is intertwined with and derives from the idea of correspondence between concepts (words) and physical matter (things). The consequent intertwinements between law and what is traditionally viewed as the material world have previously been discussed *inter alia* by Philippopoulos-Mihalopoulos as well as Margaret Davies and Jannice Käll (e.g. Käll 2020; Philippopoulos-Mihalopoulos 2015). These theoretical commitments, discussions, and previous scholarly work will be further introduced below. For now, it suffices to note that in this article, we discuss the problem of what may be conceptualised as one of sex/gender, nature/culture, and discourse/matter through a methodology of what we term *BinaryTech*, building on Karen Barad’s (2007) framework of agential realism. We explore how the legal subject as a material-discursive phenomenon relies on concept-matter as a continuum and where the law is seen as a central agency in the stabilisation of other agencies within specific intra-actions.

Through the account of *BinaryTech*, the law, its adjudication, space, and body together form a subject of legal praxis. The law becomes expressed in and through bodies. Here we lean on the concept of *lawscape*, an understanding of law as formed through assemblages of human and non-human bodies in an inseparable relation to space. Indeed, in the theorisation of Philippopoulos-Mihalopoulos, the law itself materialises in a material redistribution of bodies which do not merely flow in an empty space, but instead are constrained and ordered, whilst also being enabled, spatially (Philippopoulos-Mihalopoulos 2015).

We see that the material-discursive legal subject as a phenomenon is enabled and constrained by binaries found in law, discourses, and the reasoning of the ECtHR. Here, a clarification is in order. When we refer to discourses, in the context of this article, our understanding builds on Barad’s use of the concept. When Barad argues

that phenomena emerge as material-discursive, as an entanglement of both matter and discourse, she treats discourse as material to begin with. Therefore, matter and discourse in Barad's framework do not simply refer to matter and language (verbal or non-verbal) or communication. As Barad (2007, p. 139) explains, her account of agential realism:

... refuses the representationalist fixation on words and things and the problematic of the nature of their relationship, advocating instead a relationality between specific material (re)configurings of the world through which boundaries, properties and meanings are differentially enacted (i.e., discursive practices, in my posthumanist sense) and specific material phenomena (i.e., differentiating patterns of mattering). This causal relationship between the apparatuses of bodily production and the phenomena produced is one of agential intra-action.

Thus, we could say that discursive practices, in the framework of agential realism, refer to varying *material* arrangements that, in their variation, produce *meaning*, which can then be conceptualised and understood as a discourse, a theory, epistemology, or so forth. Discursive practices, in this sense, are an apparatus of meaning-making. However, in the account of agential realism, the materiality of such apparatuses is brought forth instead of treating them only as linguistic systems.

The questions we address in this article are, first, how does the ECtHR participate in material-discursive subject formation when analysed through a new materialist framework, and second, how does the agentic legal sexgender binary contribute to the production of the binary *lawscape* through bodies that it alters? We argue that binary sexgender and relations based on those categorical differences are enactments from which the legal subject emerges as a material-discursive phenomenon. We aim to demonstrate through the BinaryTech analysis, on the one hand, that the categories of sex and gender are not separate, and on the other hand, how their perceived separation is fundamentally related to the equivalent dichotomy of sexual orientation. This way, we refuse to abandon the body in the realm of biology, at the mercy of discourses about 'the true sex' or view the body as passive matter moulded by discursivities (Barad 2007, pp. 62–64). Instead, in our analysis, the body is treated as agentic and dynamic, as matter that is equally significant with discursive practices, law, and space, all together influencing the emergence of a legal subject.

The article is structured as follows: first, we offer an overview of relevant theoretical approaches concerning the body, trans- and intersex people, and subject formation. We move from the understandings, often associated with the linguistic turn, of the gendered subject towards the material-discursivity of the subject. Then, we introduce BinaryTech, a result of the exercise of reading Nordic feminist theory and agential realism through one and other. We demonstrate how and why BinaryTech can be applied to a more nuanced analysis of legal cases in order to critically examine the binary *lawscape* and body matter alongside discourses in and as parts of the material-discursive legal subject formation. We then turn to the analysis of the case of *M*, conducted through the methodology of BinaryTech. This analysis illustrates how the ECtHR not only participates in the discursive production of the legal subject, but also how law occupies a stabilising function in terms of differences enacted upon

sexual and gender binaries. This way, the binaries of hierarchical nature become part of the material-discursive legal subject's ontology, where space is part of the entanglement. Finally, we discuss the findings from the case analysis with the results of reading Nordic feminist perspectives and agential realism through another by means of BinaryTech.

Theoretical Foregrounding: Bodies and Binary Discourses

The relationship between bodies and institutions such as law has been recently addressed in the context of sexuality and intersex persons. Travis (2019, p. 306) considers embodiment to '—encompass material experience of the body and its relationships with both discourse and institutions'. Mike Michael and Marsha Rosengarten have addressed through the account of agential realism what the body 'is' and how it emerges depending on the relations of which it is a part and through which it is enacted. These enactments are both social and material (Michael and Rosengarten 2012). Travis (2019, p. 307) considers their point important '—for theorising embodiment as it begins to unpack the relationship between the material, the discursive, and institutions such as law'. Furthermore, '[a]ccounts of legal embodiment are impoverished if they do not explore how institutions contribute to our understanding of bodies' (Garland & Travis 2022, p. 24). However, Garland and Travis are mostly building on post-structuralist feminist thinking, which often considers institutions such as law to produce the subjects they subsequently govern, even though embodiment is discussed (Butler 2000; Travis 2019; Garland and Travis 2022). Chris Dietz's analysis of the body through feminist legal scholarship has been contesting the mind/body dualism, however, leaving the body and its material composition undertheorised (Dietz 2018, p. 194), standing in the natural realm of biology. Moreover, dogmatic analyses have been provided on how legal argumentation defends and sustains the sex/gender binary in human rights jurisprudence (Yahyaoui Krivenko 2024). Although significant, these approaches tend to accept the institutions (social, political, and legal) as the main, or at least one of the most important, contributors to subject formation. In this article, we suggest that a new materialist methodology can be built on these important findings from post-structuralist understandings of social power structures while acknowledging the dynamism of matter.

Giovanna Gilleri addresses these binary divisions *per se*. She aims to contest the binary discourses affecting subject formation through feminist, queer, and psycho-analytical perspectives in human rights law (Gilleri 2024). Relying on Lacan, she emphasises the centrality of language in how the symbolic order affects our ability to make sense of our sex/gender (Gilleri 2024, p. 48). In Gilleri's treatment, the 'symbolic' covers 'the social, cultural, and linguistic networks into which each individual is born. It precedes the child's birth because language exists before the moment of birth'. The analysis thus remains within the limits of theorisation that tends to leave the body undertheorised; as a passive recipient of cultural practices. Gilleri's approach bears similarities to Eva-Maria Svensson's use and development of Yvonne Hirdman's *genusrelation* (Hirdman 1990). Eva-Maria Svensson emphasised the significance of Hirdman's sexgender relation (*genusrelation*) as a linguistic and sym-

bolic power hierarchy in the context of inequality between sexes that is obscured by legal practices *sensu largo* (Svensson 1997). We will address Svensson's work in more detail below and subsequently turn our gaze towards the living body matter.

Subject formation has also been addressed from new materialist and legal theoretical starting points (Aalto 2024; Arvidsson 2011, 2018; Käll 2017; Korhonen et al. 2023). Käll (2017, p. 1049) describes new materialisms as a strand of posthumanism questioning the binary division between matter, for example, subjects and objects, as too rudimentary. However, we consider new materialisms as foundational for the posthumanist challenge to the binary divisions on which hierarchical differences are based. Our analysis takes as its starting point the material-discursive legal subject, in becoming through law's binary-oriented agency, but also together with agencies that are spatial, material, discursive, and social. Whereas the binarisation is something we, in this article, read forth specifically from the legal praxis, it should nevertheless be noted that it is also a larger material apparatus which 'we' are a part of as well.

Philippopoulos-Mihalopoulos (2015, pp. 43–44) refers to a form of labyrinthine space that can become oppressive depending on the body we are talking about. Building on Luce Irigaray, he contends that 'sexed bodies are never seen as embodying the knowledge of the labyrinth, that is, the way out in and through the labyrinth'. All these have a role in the larger material apparatus ('we' as part of it), through which the binary system is constantly reiterated and imposed on bodies. These binarised bodies, in turn, are the prerequisite binary spaces required in order to sustain their existence. Philippopoulos-Mihalopoulos (2015, p. 4) has employed the term spatialised law, which does not dwell in the textual but 'expands on the space and bodies that incorporate it and act it out'. These agencies and their significance are neither stable nor permanently separable, but an entanglement of matter and meaning.

The agential realist framework gives privilege to neither matter nor discourse. We use Barad's (2007, p. 178) conceptualisation of agency, understood as a matter of intra-acting; it is an enactment, not something that someone or something has. We explore how the body is not the sole 'end result' of material-discursive enactments of relations. The world itself is in becoming through intra-actioning. Law is a momentary stabilisation of different agencies, stabilising the meaning of the legal norm and the outcome of a legal case. However, as we know, that too is only momentary. Norms can be interpreted differently, and case law evolves. Similarly, law and its modes of binary thinking do not penetrate the body in a one-way direction. Instead, the bodies are alive and agentic themselves.

BinaryTech: Binaries as Hierarchies Within the Legal Subject's Ontology

BinaryTech is a methodology rooted in the framework of agential realism, which is read in conjunction with insights from Nordic feminist perspectives on law. BinaryTech builds on Nordic feminism's claims, such as gender equality as a structural societal issue which should be addressed by the (welfare) state as well as indeterminacy and ambiguity of a category 'women', previously considered as the starting point for 'the women's law perspective' (Aalto 2021; Käll 2020; Svensson 2012). Nordic feminist accounts have often addressed the male/female dichotomy as insufficient in encompassing gender difference, especially if sexuality is left beyond its scope.

Rather, gender ought to be seen as a societal structure (Niemi 2018, p. 94; Svensson et al. 2004).

Svensson (1997, p. 12) has used the term *genusrelation* [sexgender relation, sexgender as relation], building on Yvonne Hirdman's (1990) *genusssystem theory* [sexgender as a system]. Hirdman's *genusssystem* theory recognises the relation between men and women as the organising pattern of society and seeks to explain this relation on symbolic, structural, and individual levels. In Hirdman's thinking, *genus* is an open-ended process formed in relation to other human beings and in relation to sex or 'the biological body' that forms the basis for societal hierarchies (Hirdman 1990, p. 70). In Svensson's understanding, the problem lies in how legal reasoning has traditionally concentrated on defining concepts and different types of norms and how those norms contribute to obscuring the *genusrelation's* relevance in how the law is formed and applied (Svensson 1997, p. 332). Drawing on the linguistic turn, the focus at the time was on verbal and non-verbal language expressed through symbols, signs, and forms and most importantly, on the discursivities that structure law and society, notably sexgender (Svensson 1997, p. 24). The concept of sexgender appropriately describes Hirdman's idea of *genus* as an open-ended processual definition that becomes determinate through relations. These relations in agential realist thinking are enactments that produce differences. In order to address more specifically how this open-ended process of discursive sexgendering is related to material phenomena, turning our gaze towards new materialist agential realism might be fruitful. The purpose here is to examine how binary sex and gender can be maintained as indeterminate (sexgender) while including systemic and structural hierarchies in legal analysis.

According to agential realists, the universe comprises of phenomena rather than ontologically independent objects with inherent boundaries or properties (Barad 2007, p. 139). These phenomena emerge through intra-action. Intra-action differs from the familiar term inter-action by calling into question the assumed pre-existing, separate ontological units (subjects and/or objects) capable of inter-action (Barad 2003, p. 801). This intra-acting phenomenon is momentarily stabilised through what Barad terms agential cuts. Thus, linguistic and legal categorisations and distinctions similarly emerge from intra-activity as enacted agential cuts.

BinaryTech is a method of analysis which, by studying different intra-actions, allows for a more nuanced way to consider the binary sexgender system embedded in law. BinaryTech is essentially an instrument that reveals and highlights the operation and effects of the binary in the reasoning of the ECtHR or any legal material. It makes visible the sexgender relation that is often obscured in legal thinking and displays it as hierarchical and a part of the ontology of the legal subject. BinaryTech simultaneously includes structural power hierarchies in the analysis of intra-actions, acknowledging that power exercised through hierarchisation, and categorisation is essential for the emergence of material-discursive phenomena in their ongoing becoming. The 'becoming' means that the entities are continually reconstituted through the material-discursive intra-actions, where neither the material nor the discursive takes precedence. Thus, the legal subject, alongside other entities, emerges as a material-discursive phenomenon from the intra-actions of a set of momentarily stabilised agencies. It focuses on sexgender difference that is reiteratively being

produced through intra-active agential cuts, both enabled and constrained by binary thought.

We also consider the ongoing reiteration of public/private space as a similar enacted difference, an agential cut, dividing and partitioning material-discursive spatiality into fields of ‘public’ and ‘private’. BinaryTech is a wordplay that acknowledges the understanding of binary divisions as part of the technologies of power, as famously suggested by Theresa de Lauretis in her theorisation on the technology of gender (see, e.g. De Lauretis 1987), and on a broader level, by Foucault (1998). BinaryTech joins sex and gender as sexgender, thus taking the co-constitution of them as its starting point rather than giving primacy to either ‘matter’ or ‘meaning’.

BinaryTech is an onto-epistemological framework, meaning that the observer always becomes part of the observation as a phenomenon. We consider the linguistically determinate ‘subjects’ and ‘objects’ to emerge through discursive practices simultaneously with their materiality. Binary, which is understood as a power hierarchy, impacts *the ontology of subjects and objects through epistemology*. In other words, the often-implicit understandings and knowledge systems that are nevertheless in the background of legal decisions affect how a sexgendered subject emerges ontologically. We look for this operation in the body the law and space that build on the sexgender binary. From there, we filter out the binary hierarchies and the ways in which they become a part of the legal subject’s ontology. To do this, we look at the ways in which the ECtHR enacts differences within the binary and continues to reiterate such effects within the legal subject’s ontology.

To demonstrate how binaries lead to hierarchies, in our analysis we use the following formula: male/female, where male > female and masculine > feminine. We complement the analysis with a public/private binary based on previous scholarly work, which has identified masculinity as a public way of being, while femininity belongs to the private sphere (Naffine 1990; Fineman 1992; Svensson 1997). This dichotomy is thus also a hierarchy: public > private. This approach is supported by the fact that Article 8 (the right to respect for private and family life) of the European Convention on Human Rights (ECHR) has been central to the development of non-heterosexuals’ and trans people’s rights (Gonzalez-Salzburg 2019; Johnson 2010, 2013; Kestilä 2022; Tuominen 2025b). To summarise, BinaryTech enables us to examine how binary categories, such as male/female and public/private, are not pre-fixed categories but rather cuts enacted by larger material arrangements, rather than wilful or ill-willed individuals (Barad 2007, p. 178). These categories, in effect, become part of the subject’s ontology. The following example: $m/f \wedge p^m/p^f = m > f \wedge p^m/p^f$ reads that when male-masculine/female-feminine and public-masculine/private-feminine binaries exist, the result is that male-masculine trumps female-feminine and public trumps private. Furthermore, BinaryTech demonstrates how sex and gender cannot be disentangled from each other. Instead, sexgender binary is approached as an entangled part of the analysis. At the same time, this approach enables us to consider the role of matter and space alongside discourses as agential cuts that cut together-apart in the specific intra-actions (Barad 2014) through which the legal subject emerges as a material-discursive phenomenon.

Next, we will proceed with this BinaryTech analysis to demonstrate how the operation of binary epistemologies produces hierarchical differences and how their consequences are reiterated in the reasoning of the ECtHR.

BinaryTech Analysis of *M v. France*

The decision of the ECtHR considered the applicant, M, born in 1977 in France. They were born healthy in an intersex state, explained as follows: ‘— intersex is a state of persons who cannot be categorised as either “masculine” or “feminine” and who present a diversity of their sexual character’. The applicant was born with an enlarged clitoris, two testicles, a vaginal cavity, a unique orifice, karyotype XY, without either a uterus or Müllerian ducts (*M v. France*, para 3). It was accepted as a fact that no proven risk to the applicant’s health resulted from their intersex condition.

As a result, in their childhood and adolescence, the applicant was subjected to five surgical operations, as well as a variety of medical treatments aimed at making them physically fit for the female sex. From the age of 2 months, the applicant was subjected to laparotomy, where their testicles were functioning (*M v. France*, paras 5–6) and producing germinal cells and Leydig cells, enabling reproduction. However, the medical professionals decided to assign the applicant to the female sex based on the appearance of their penoclitoral organ, which was deemed to be ‘—incapable of any functional activity’ (*M v. France*, para 8). Keeping in mind that the sole cause of the medical procedures was M’s ambiguous reproductive organ, its reproductive capacity was not considered important. Instead, observation as part of this intra-action was set to determine M’s sexgender in binary male(m)/female(f). In the following years, they underwent clitoplastic, vaginoplastic, and vulvoplastic surgeries, as well as hormonal treatment. In addition to the aforementioned, M was going through dilatation treatment to enlarge their vagina, carried out by both medical staff, M’s mother, and themselves. The medical opinion was that M should be brought up as a girl. It was deemed desirable that ‘in the consciousness of the parents’, there would exist lesser ambiguity of the sex of their child and that the external genital organs should be ‘corrected’ before the child entered pre-school (*M v. France*, paras 9–11). At the age of three, the applicant was subjected to bilateral castration.

The medical opinion was thus protecting the parents’ consciousness based on the social norms built upon sexgender binary to ensure that M’s private condition would not be revealed in public, i.e. to the surrounding society. M’s body outside the sexgender binary was rectified to fit the binary public space. The focus was not on the ability to produce reproductive cells but on the ability to penetrate or be penetrated. The nonbinary intersex body was to be kept private and feminised. Matter deferred to discourse, D>M. In the ECtHR’s decision concerning the accepted facts of M’s application, the constructed dichotomy between matter in its physicality and discourses is evident. When the decision is understood as an intra-action, M’s body, binary medical discourses of sexgender and space, alongside law, are enacted as agential cuts. M’s body was different but nevertheless functional, and it did not pose any risk to the applicant’s health. Binary discourses related to biology and sex deter-

mination by observing genitalia from the outside exemplify how observation of M's body was based on binary epistemology leading to a medical diagnosis.

In other words, M's body could not be accessed through language with its existing categories; instead, the binary male(m)/female(f) relation produced the difference. The discursive practices entangled with the materiality of the body then subsequently produced M's legal subjectivity through material alterations to the body. These material alterations were sanctioned by the hierarchical binary division of discourse (D) from matter (M). In this specific intra-action, BinaryTech is set in motion: $D/M = D > M$. Enacting these agential cuts impacts the yet to come enactments within the aggregate phenomenon of the judicial review process. This way, not only matter and discourse are entangled, but also spatiality and temporality.

In addition, the possibility of M not wanting to have penetrative sex was not considered, which shows how heterosexuality and the male ability to penetrate were central in the medical assessment of what should be done for M's body (Fineman 1992, pp. 665–666). In this regard, we can also see how *genusrelation*, as explained above, is made concrete in and through bodies. Since M was assigned to the female category — as the male/masculinity category is seemingly dependent on having a functional penis — the meaning of sexgender was derived from the heterosexuality/non-heterosexuality binary. The decision to overlook M's ability to produce germinal and Leydig cells enabling reproduction was overlooked, as the penoclitoral organ was deemed nonfunctional. M's treatment reflects Catharine MacKinnon's (1982, p. 541) view on the objectification of women: 'Man fucks woman; subject verb object'. In this specific intra-action, BinaryTech was set in motion through the enactment of agential cuts as follows: matter(M)/discourses(D), male(m)/female(f), and heterosexual(h)/non-heterosexual(nh) binaries as differences: $M/D \wedge m/f \wedge h/nh = D > M \wedge m > f \wedge h > nh$. The body was not only modified in binary male/female but also in terms of securing heterosexuality based on penetration. M's potential life as a non-heterosexual did not matter.

In 2015 the applicant started civil proceedings against X at the Angers Court of First Instance referring to articles 222-9 (for acts of violence causing mutilation or permanent disability), 222-10 (aggravating grounds on account of acts targeting a minor under 15 years of age or a particularly vulnerable person and by a person serving in the public sector) and 222-14 (for corporeal violence targeting children under the age of 15). The applicant founded their claims by arguing that the interventions and the non-disclosure of their intersex state by medical professionals during their childhood and adolescence had resulted in severe damage to their physical and mental health, leading to a marginalised life outside society with impaired relationships with other people and close relatives, a life sustained by disability benefits and forced infertility (*M v. France*, para 12). The suspected criminal acts, according to the applicant, materialised in the form of several non-consensual operations and surgical interventions, which led to both physical and mental harm suffered after 1978 (*M v. France*, para 16). The intersex body was altered to fit the binary, however, leading to increased suffering of the applicant.

The Angers Court of First Instance declared the application inadmissible as the claimed criminal acts fell under the statute of limitations, having expired in 2005 (*M v. France*, paras 17–18). M appealed the decision before the Angers Court of Appeal,

arguing that they and their parents had only received fragmented and fallacious information about their condition. Furthermore, they argued that the medical professionals had limited themselves to stating only that the child's sex was indeterminate, that a choice had to be made between the two sexes, and that the female sex was preferable because the procedures related were easier to carry out (*M v. France*, para 20). M specified that they had started to learn about their situation on the 9th of February 2000 by accidentally intercepting a letter containing parts of their medical record (*M v. France*, para 20). In the absence of precise information about their condition, given that patients did not have direct access to their medical records according to the national law, they could not discover real details of their situation and the medical interventions they were subjected to (*M v. France*, para 20). They claimed that until 2000, the lack of knowledge presented an 'insurmountable obstacle' for prosecution, effectively postponing the starting date of the limitation period. Furthermore, the French penal code was amended in 2006 to extend the limitation period to 20 years in cases where the suspected victim was 15 or younger, rendering their civil complaint of 2015 admissible *de facto*.

The Court of Appeals disagreed and upheld the decision to dismiss the case, declaring that an 'insurmountable obstacle' for prosecution in the applicant's case does not result from their lack of knowledge, as the lack of knowledge was not 'given of nature but a result of a choice', based on the fact that they had learned about their medical records from the intercepted letter in 2000. Furthermore, the Court of Appeals noted that the applicant simultaneously claimed that the meaning of their intersex condition was explained to them by a psychologist in the year 2014. Based on this chronological order, the conclusion was made that the applicant's claim for an 'insurmountable obstacle' to exist could not be based on their lack of knowledge of the surgical operations they were subjected to. Rather, the basis of their claim of 'insurmountable obstacle' was the fact that they did not feel warranted to think that the medical practices were not self-evident and that other decisions could have been taken. The Court of Appeals noted: 'Unless adopting a subjectivist line of reasoning, the weight of a dominant thought, which reflects the state of a society at a given time, is not an *insurmountable obstacle* to prosecution'. M had had access to their medical records since their 18th birthday when the information about their condition had become known (*M v. France*, para 22). The Court of Cassation dismissed M's appeal on the same grounds while specifying that their claim of the existence of an insurmountable obstacle is merely based on the fact that they did not feel entitled to think that the medical treatments in question were questionable and having 'then conformed to a dominant thought reflecting a society as a given time' (*M v. France*, paras 23–25).

Here, in this specific intra-action, M's forcibly feminised body matter (M^f) operated to fit the binary discourses (D^B) division between sex (nature) (S^n) and gender (culture) (G^c), enacted as agential cuts. BinaryTech was in motion $m/f \wedge M^f/D^b \wedge S^n/G^c = m > f \wedge S^n > G^c \wedge M^f > D^b$. In M's case, their body was operated on to meet societal expectations ($S > G$), and the non-disclosure of their status as intersex (m/f) caused damage to their physical and psychological health. Sex and gender cannot be unproblematically and separately categorised. The sex/gender dichotomy was the underlying assumption that led to the first material altering of a body to fit the binary

discourse of sex alongside the advice given to M's parents to bring up M according to social expectations (gender) related to their forcefully assigned sex and not to disclose any of this to M themselves.

We can also say that M's forcibly feminised body matter (M^f) operated to fit the binary discourses (D^B), the division between nature (N) and culture (C), as well as public (P^m) and private (P^f) spaces, are enacted as agential cuts. However, these cuts are essentially enacted in the entanglement with legal reasoning. This is evident from how national courts considered 'the dominant thought in society at a given time' as a basis to find the applicant's claim inadmissible. And yet, it is very much the same 'dominant thought' that resulted in the alteration of M's body in the first place. Discursive practices through which meanings such as male/female or sex/gender are enacted come to operate on and within the body, eventually forming into the 'dominant thought in society', as the courts describe it. This 'dominant thought' will then obscure the possibility of acting differently and lose the applicant the only argument they could juridically pose to have their case investigated. This also illustrates well how the hierarchical nature of the enacted dichotomies of male/female, sex/gender, or public/private are not hypothetical but mediate the exercise of power, which violates and mutilates. In addition, it is clear from the decisions of national courts that the understanding of intersex conditions and sexgender binary, dominant in society in general, are bound to time and space. M's attempt to challenge the feminisation of their intersex body to fit the imposed control of society on bodies through binary resulted in BinaryTech being in motion in the Courts' assessment: $m/f \wedge P^m/P^f \wedge M^f/D^b \wedge N/C = m > f \wedge P^m > P^f \wedge D^b > M^f \wedge C > N$.

If we compare the reading to the previous intra-action: $m/f \wedge M^f/D^b \wedge S^n/G^c = m > f, S^n > G^c \wedge M^f > D^b$, we can see that the hierarchies between binary discourse and feminised body matter (D^b/M^f), nature/culture (N/C), and the division of sex(nature)/gender(culture) (S^n/G^c) become suddenly overturned. The national courts' assessment can be seen to continue to maintain and reiterate binary while simultaneously referring to gender determination as not 'a given of nature' but an imposed choice that depends on the societal public space alongside dominant discourses. These enactments demonstrate, first, that the distinction between sex and gender relies on the nature/culture dichotomy and, second, the nature/culture dichotomy itself is indeterminate within the intra-actions.

M brought the case before the ECtHR, relying on the procedural aspects of Article 3 (prohibition of torture), as the state had failed to effectively investigate whether the feminising interventions amounted to torture. Furthermore, they complained that the state's failure to effectively protect vulnerable groups from such ill-treatment was a material breach of Article 3. Additionally, they complained that the state's failure to investigate their claims amounted to a material breach of Article 6(1) (right to fair trial). The state contested this by referring to the inadmissibility of the case on procedural grounds.

Let us investigate the agency of body matter in these intra-actions. Barad (2007, pp. 214–215) notes how 'for as surely as social factors play a role in scientific knowledge construction, there is a sense in which "the world kicks back"'. Similarly, we could say that bodies tend to 'kick back' too. No matter how far-reaching or intimate regulatory approaches are adopted, the elusiveness of sexgender tends to find

a way. For example, Paul Preciado (2013) describes in *Testo Junkie* his use of illegal testosterone gels sold and circulated among transmen on the black market. Preciado describes these practices as ‘genderterrorism’, opposing the medicalised and state-regulated access to gender-affirming treatments and thus, sexgender division organised and maintained by the state. BinaryTech analysis points towards the same direction, describing how bodies resist and respond to the various forms of control and regulation imposed by society. In this regard, Preciado (2013) describes resistance as manifesting in physical, emotional, and social ways of challenging norms. In our analysis, we are attending to the physical aspects as having impacted how M could or could not have known of their condition of indeterminate sex at birth, which was the cause of both materially altering their body, without medical necessity and subsequently attaching meaning to that operated body as a girl.

Not only did the applicant’s body start to ‘kick back’, but also their understanding of what intersex meant, alongside the realisation that other choices than assigning the body to female sex were potentially available. These probabilities of possibility emerged from M’s meetings with the psychologist in 2014. However, the ECtHR accepted them as subjectivist in the context of a dominant thought at a certain time in a certain society. M’s body matter and their experience of the body resisted the discursive binary sexgender attached to public space to the extent that it had to be corrected in favour of maintaining the spatial integrity of the binary division.

In this specific intra-action, BinaryTech was in motion, enacting space as an agential cut: public masculine(p^m)/private feminine(p^f), resulting in $M/D^m/f^h/nh^p^b/p^f$. If the differences between matter(M)/discourse(D) and male (m)/female(f), hetero(h)/non-hetero(nh) and public binary(p^b)/private non-binary (p^{nb}) are enacted the following hierarchies become visible: discourse trumps matter, male trumps female, heterosexuality trumps non-heterosexuality and public binary space trumps the private truth of non-binary private space.

The way to navigate the labyrinthine space was that sexgender binary implied by the heterosexual/non-heterosexual binary was made intelligible through the non-consensual bodily modification of a child. The ECtHR eventually declared the case inadmissible. However, the ECtHR nevertheless stated that certain levers of control ought to be in place to narrow states’ margin of appreciation, considering both medical necessity and informed consent of the patient in the intersex context. We see this as the bare minimum. In the case of M, it would be inadequate to talk about the correspondence between words and things, which we referred to above. In this case, we can see that if things do not seem to fit into the description of words, things can be moulded to be a better fit. At that point, we do not describe the reality but alter it to fit the words we have.

Cutting Together-a-Part Within Phenomena

In the analysis above, we were attending not only to the language used in the courts, but also to the body itself. In our discussion, the formation of ‘subjects’ and ‘objects’ based on the binary male/female, sometimes viewed as biological fact or socially and juridically constructed, are treated as material-discursive phenomena in their ongoing

intra-activity. To approach the intra-actions through looking within phenomena and being aware of the enacted agential cuts offers interesting insights on how it matters to matter with ‘the other’.

Through the BinaryTech methodology, we have demonstrated how binary categories are not essentially pre-fixed but rather classify people through epistemological knowledge based on the enacted differences between (biological) sex and (social) gender. Whilst such a notion might not be the most novel, in our analysis, these categories are also considered to form part of the ontology of the object of inquiry (ontoepistemology). As such, binary thinking is in motion in the larger material-discursive apparatus of being with the other(s), capable of giving a binary reading: male or female, based on the assumption that it is what we want to measure. Precisely, the measurement always affects the measured. As such, the measurement becomes a part of the specific agential intra-actions between the subject studying the object of research, through the arrangement of the collective measurement. However, the measurement of whomever always takes place in-and-as-part-of-the-phenomena studied. Agential cuts cut phenomena together-a-part within intra-action for ‘something’ to become determinate and particular concepts to become meaningful (Barad 2007, p. 139).

Agential cuts, in this text made in binary logic, thus enact a resolution within phenomena of the inherent ontological and semantic indeterminacy (Barad 2007, p. 140). The measuring apparatus within the larger material apparatus, of which ‘we’ are a part, is rigged: it is set to measure its object in binary, and as such, the object of inquiry is already impacted, even before the measurement takes place. Approached this way, the binary categories are enactments within the ever-changing intra-acting entanglement of matter and meaning. What we consider separate legal objects and subjects also becomes ontoepistemologically challenged. BinaryTech makes these hierarchical binaries visible as agential cuts, instead of treating any of them as ‘natural’ or ‘essential’, within the intra-actions that enable and constrain the emergence of human phenomena. Upon enacting the sexgender binary as an agential cut, the other is never far but part of that intra-action that produces difference as a relation. ‘They’ and ‘we’ are as such ‘— co-constituted and entangled through the very cuts “we” help to enact; this is why the other is never very far from us’ (Barad 2007, pp. 178–179).

In our article, we have highlighted how ‘to make visible and put into crisis the structural links between the disciplining of knowledge and larger social arrangements’ (Hennessy 2012, p. 12) affecting the subject formation. Previously, Braidotti (2018, p. 188) has addressed the mind/body dualism within feminist posthumanities, rendering sex-gender distinction obsolete or less relevant than paradigmatic thought presupposes. In this line, our agential realist account foregrounds new materialism as foundational for posthumanist thinking currently surfacing in novel, critically oriented formations and combinations of theories for demonstrating how sex and gender are always co-constituted and connected to sexuality. Reading agential realism in conjunction with the insights from Nordic feminist perspectives on law has offered insight into how gender is a societal structure entangled as sexgender as part of material-discursive phenomena. Our BinaryTech analysis has further provided ways to understand equality through intra-actions by placing the hierarchy as part of the legal subject’s ontology. Taking the binary as part of a phenomenon aids in accounting for

how ‘conceptualised’ legal rules become determinate and concepts become meaningful only in and as part of the material-discursive phenomenon. The legal subject is intra-actively produced as part of the in-becoming of the phenomena.

We have aimed to analyse the case of *M* without either downplaying or over-emphasising the role of matter alongside discourses while paying attention to how the aforementioned is transposed to the space, a material-discursive process of becoming in itself (Philippopoulos-Mihalopoulos 2015, p. 40). The body is deemed private, but in terms of sexgender binary, it becomes a site where the public sexgendered space co-emerges with the othered body. The binary division is imposed on the body, and those bodies are a prerequisite for binary spaces to exist. This way, space, discourses, and body matter are entangled in their intra-activity as material-discursive phenomena.

Conclusions

Suppose the body matter becomes ontologically altered to fit the binary sexgendered knowledges about the body and not the opposite. In that case, the correspondence between words and things becomes hard (or impossible) to maintain. The anti-gender view that relies on ‘neutral’ epistemological premises of biology and medicine for accessing knowledge about the body through binary measuring paradoxically contributes to rendering the binary obsolete: intersex people have functional but othered body matter. Intersex ‘medical treatment’ seems like a mere manipulation of matter based on discursive practices that structurally link disciplining knowledges and larger social arrangements based on sexgender and consequently produce a binary reality. We have explicated how the legal subject is a material phenomenon related to discourses constantly being re-iterated in legal reasoning and decision-making. BinaryTech — an onto-epistemological methodology, displayed how the sexgender binary becomes an ontological part of the material-discursive legal subject, resulting in hierarchies. This way, the boundary between ontology and epistemology also becomes hard to maintain.

BinaryTech also demonstrated how the law becomes determinate, relying on binaries in-and-as-part-of phenomena. What the law cannot, in its current articulation, grasp is the indeterminacy of the world beyond. Indeterminacy is not an issue of precision but of responsibility for the very cuts ‘we’ help to enact as ‘we’ are co-constituted and entangled with ‘them’ through them. Entangled being entails accepting its indeterminacy from nature/culture to natureculture, see the larger sexgender (before sex/gender), natureculture (before nature/culture) and space (private/public) as expressed through bodies while simultaneously maintaining the space as a binary phenomenon in relation to body matter.

The legal subject of the case of *M* emerges as a result of the publicly regulated binary *lawscape* that permeates the body and is expressed through intersex bodies modified in binary. In the analysed case, the applicants’ ontology can be described as an aggregate entanglement of binary thinking in the ECtHR’s reasoning, discursive practices, body-matter, and binary public spaces. Indeed, we can question whether the number of trans and intersex persons is increasing, or whether it is the binary

lawscape that seems to be going through material-discursive ruptures. Either way, the ECtHR's ruling will have a future impact on the intra-actioning of the world's becoming; to the differences that continue to be enacted and reiterated. BinaryTech will also be in motion in the ECtHR's reasoning in cases to come.

Acknowledgements The authors want to thank Joshua Shaw for sparking the idea for an initial draft and Yulia Dergacheva, Amalia Verdu Sanmartin and Miriam Tedeschi for commenting the text and discussing it. Furthermore, we want to express our gratitude to the anonymous peer reviewers for engaging with the text critically in a tremendously helpful way, as well as to Jamie Haughton for his editorial work. We also want to thank Ella Suppala for not getting lost in translation of French and finally Niko Downie for language editing and encouragement.

Funding Open Access funding provided by University of Turku (including Turku University Central Hospital). Alfred Kordelin Foundation (grant number 240084).

Declarations

Ethics Approval and Consent to Participate This research did not involve any humans and/or animals and thus does not require approval from an ethical committee.

Competing interests None.

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